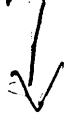


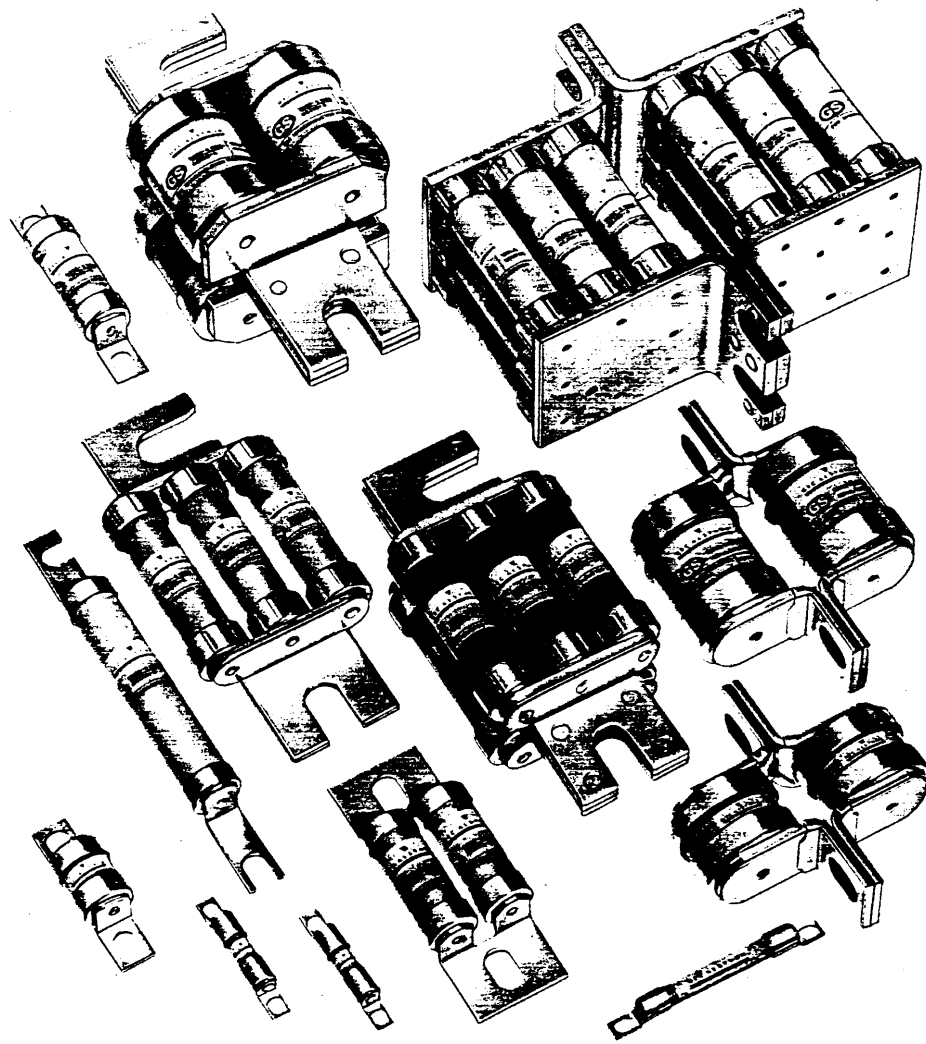
870 420



547

+772 884 + 870 780

Semi Conductor Fuse Links



G E C A L S T H O M

LOW VOLTAGE EQUIPMENT

'GSA' Fast Acting HRC Fuse Links

Type GSA 5-600 Amp

Fast acting fuse links, rated 5 - 600 Amp.

A.C. rating: 240 Volt rms tested to
318 Volt rms.

D.C. rating: 200 Volt d.c. time constant 20ms.

Voltage Rating		Current Rating	List Number	Minimum Pre-Arcing I ² t	Total I ² t	Cut-Off Current	Power Dissipation		Top Cap Temp. Rise	Indicator Pack Ref. ‡	Dimensional Reference
Volt a.c. RMS	Volt d.c. @ 20ms	Amp		A ² sec	@ 100kA 240Volt RMS A ² sec	@ 100kA 240Volt RMS kA	@ 1in	@ 0.5 in	@ 20°C ambient °C		(Page 1/40)
		5	GSA5	1.1	38	1.2	0.8	0.15	11		
		10	GSA10	4.3	140	2.0	1.6	0.3	18	*	1
		15	GSA15	12	350	2.7	2.5	0.5	25		
		20	GSA20	17	590	2.8	3.5	0.7	33		
		25	GSA25	24	800	2.8	2.6	0.6	18		
		35	GSA35	150	1,700	3.8	4.0	0.8	27		
		50	GSA50	400	5,400	5.6	5.2	0.9	34	GSIPAS	2
		75	GSA75	890	6,500	5.9	7.1	1.4	34		
		100	GSA100	2,000	14,400	9.4	9.0	1.8	40		
		125	GSA125	2,100	56,000	10.0	12.5	2.5	40		
		150	GSA150	3,200	84,000	12.0	14.5	3.0	42		
		200	GSA200	7,500	170,000	14.0	21.0	4.0	44	GSIPAL	3
		250	GSA250	10,700	250,000	18.0	26.0	5.5	46		
		300	GSA300	13,100	190,000	17.0	31.0	5.5	60		
		350	GSA350	19,000	270,000	18.0	36.5	7.0	61		
		400	GSA400	34,300	510,000	22.0	38.5	7.0	62	GSIPAL	4
		500	GSA500	55,000	780,000	27.0	48.0	9.0	64		
		600	GSA600	95,000	1,400,000	32.0	54.0	10.0	68		

* Indicator pack not available.

‡ Indicated fuse links.

"Add-on" indicator fuse link conversion kits comprising a trip indicator fuse link and a pair of easily assembled clips are available.

ASTA
Certified
240
also
tested
to
318

200

125

Repetitive cyclic loads

Considerable work has been undertaken by GEC ALSTHOM over a number of years to satisfy the market requirements in this area. This has resulted in a number of pulse withstand factors being derived for GEC ALSTHOM fuse links to enable them to be selected for cyclic overcurrent.

Fuse Link Range	Pulse Withstand Factors 'p'			
	20s	20-60s	1-5 min	5-20 min
GSA	0.35	0.5	0.5	0.5
GSD	0.35	0.5	0.5	0.5
GSB	0.3	0.35	0.4	0.5
CGS1000	0.3	0.35	0.4	0.5
GSGB	0.3	0.35	0.4	0.5
GSMJ&K	0.35	0.4	0.45	0.5

Note: If cyclic duty is superimposed on a steady current, which is less onerous than cycling a fuse link down to zero current, then 'P' can be increased by 30% for pulses up to 20 seconds.

To determine the suitability of a fuse link for cyclic overcurrent duty, the individual elements of the cycle should be considered.

The equivalent rms current I_{eq} is then determined:

$$I_{eq} = \sqrt{\frac{I_1^2 t_1 + I_2^2 t_2}{T}} \leq \text{Minimum fuse link rating}$$

Current I_3 is then determined:

$$I_3 = \sqrt{\frac{I_1^2 t_1 + I_2^2 t_2}{t_1 + t_2}}$$

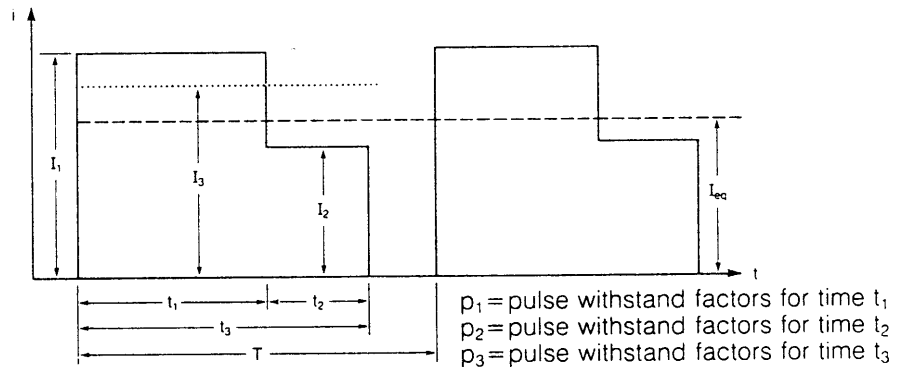
The pulse withstand factors above are then applied to the pulse currents I_1 , I_2 and I_3 .

Applying pulse withstand factors will determine pulse withstand currents I_p .

$$I_{p1} = \frac{I_1}{p_1}; \quad I_{p2} = \frac{I_2}{p_2}; \quad I_{p3} = \frac{I_3}{p_3}$$

The correct rating of fuse link for the cyclic duty is determined by selecting the fuse link whose time/current curve lies to the right hand side of the most onerous pulse withstand current determined. It must also have a continuous rating greater than I_{eq} .

Example:



I^2t Characteristics

Pre-arcing I^2t

The pre-arcing I^2t characteristics represent the minimum values achieved under short circuit conditions, i.e. less than 10ms. For longer times the time/current characteristics may be used to determine the pre-arcing I^2t .

Total I^2t

Total I^2t characteristics are given showing variation of total I^2t with voltage and prospective current. This can be used to determine the total I^2t under specific fault conditions, to enable fuse links to be fully co-ordinated with published I^2t withstand values of the semi conductor devices.

Cut-off current characteristics

Cut-off characteristics are produced for each fuse link. This enables the precise determination of peak let through current

under the worst possible operating conditions for specific values of prospective fault current and voltage.

Arc voltage

GEC ALSTHOM fuse link designers have ensured that the 'GS' range exhibits minimum arc voltage under normal operating conditions.

Variation of arc voltage with respect to applied voltage is incorporated within the technical data.

Parallel operation of fuse links

Higher current ratings can be achieved by paralleling fuse links. It can also be used to minimise the number of fuse link variants required in a range.

When applying fuse links in parallel it is important to ensure that substantial paralleling conductors are used to provide substantially equal current sharing.

The time/current characteristics of a parallel arrangement can be derived by multiplying the operating current of a single fuse link from its time/current characteristics by the number of parallel paths.

The I^2t values can be determined by dividing the prospective fault current by the number of fuse links in parallel and using this value to determine the I^2t of the individual fuse link from its I^2t variation curve. This I^2t value must then be multiplied by the square of the number of parallel paths, i.e. 2 fuse links in parallel multiply by 4.

In the same manner the individual fuse link cut-off current value can be determined as the prospective fault current divided by the number of fuse links in parallel. The resulting value is then multiplied by the number of parallel paths.

Type 'GS'

Fuse Links for the protection of Semi Conductor devices



- The GEC ALSTHOM Low Voltage Equipment's range of semi conductor fuse links have been proven in rectifier and thyristor installations throughout the world.
- Many years' experience of producing semi conductor fuse links involving close collaboration with semi conductor device manufacturers and users has enabled GEC ALSTHOM to provide a refined and fully proven range of fuse links for power semi conductor protection.
- The standard 'GS' range is ASTA 20 certified to BS 88:Part 4:1988 and is fully compliant with IEC269:4. For individual performance capability see relevant section.
- Fast acting fuse links are primarily designed to disconnect a failed semi conductor device within a group of devices.
- Ultra fast acting fuse links are primarily designed to co-ordinate with an individual semi conductor device and provide short circuit protection by means of characteristics closely matched with those of the device.

Type	Current rating Amp	Nominal Voltage		Index	Page
		A.C.	D.C.		
GSA	5 - 600	240	200	Specification and List Numbers	1/5
				Characteristics	1/6
				Dimensions	1/40
GSD	125 - 700	180	200	Specification and List Numbers	1/9
				Characteristics	1/10
				Dimensions	1/40
GSB	5 - 500	600	400	Specification and List Numbers	1/13
				Characteristics	1/14
				Dimensions	1/40
CGS1000	400 - 600	600	400	Specification and List Numbers	1/18
				Characteristics	1/19
				Dimensions	1/40
GSGB	16 - 900	660	400/350	Specification and List Numbers	1/22
				Characteristics	1/23
				Dimensions	1/41
GSMJ	63 - 1200	800	500	Specification and List Numbers	1/29
				Characteristics	1/30
				Dimensions	1/42
GSMK	32 - 1200	1000	700	Specification and List Numbers	1/29
				Characteristics	1/31
				Dimensions	1/42
'RED SPOT' Adaptor kits					1/38
Indicator Fuse Links and accessories					1/39

'GSD' Fast Acting HRC Fuse Links

Type 'GSD' 125-700 Amp

Fast acting fuse links, rated
125 - 700 Amp.

A.C. rating: 180 Volt rms tested to
212 Volt rms.

D.C. rating: 200 Volt d.c. time
constant 20ms.



Specification and List Numbers

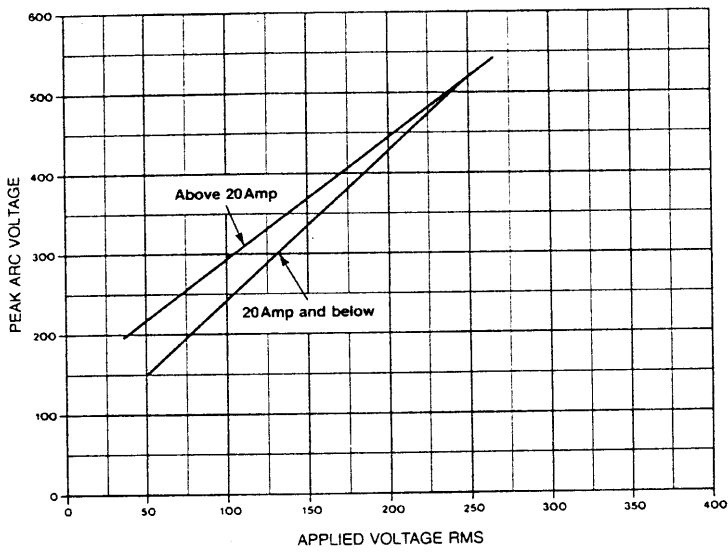
Voltage Rating		Current Rating	List Number	Minimum Pre-Arcing I ² t	Total I ² t	Cut-Off Current	Power Dissipation		Top Cap Temp. Rise	Indicator Pack Ref. ‡	Dimensional Reference
Volt a.c. RMS	Volt d.c. @ 20ms	Amp		A ² sec	@ 100kA 180Volt RMS A ² sec	@ 100kA 180Volt RMS kA	@ In	@ 0.5 in	@ 20°C ambient °C		(Page 1/40)
ASTA Certified 180 also tested to 212	200	125	GSD125	3,100	23,400	9.0	12.0	2.2	49	GSIPAS	2
		150	GSD150	5,000	33,400	10.0	14.0	2.4	57		
		300	GSD300	20,000	190,000	23.0	25.0	4.5	58	GSIPAL	3
		350	GSD350	36,000	360,000	24.0	29.0	4.0	54		
		700	GSD700	120,000	1,170,000	36.0	60.0	11.0	74		

‡ Indicated fuse links.
"Add-on" indicator fuse link conversion kits
comprising a trip indicator fuse link and a
pair of easily assembled clips are available.



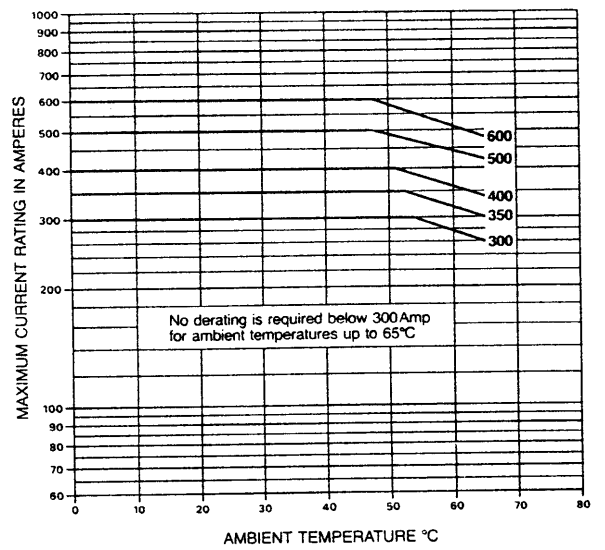
Type 'GSA'

Variation of arc voltage with applied voltage



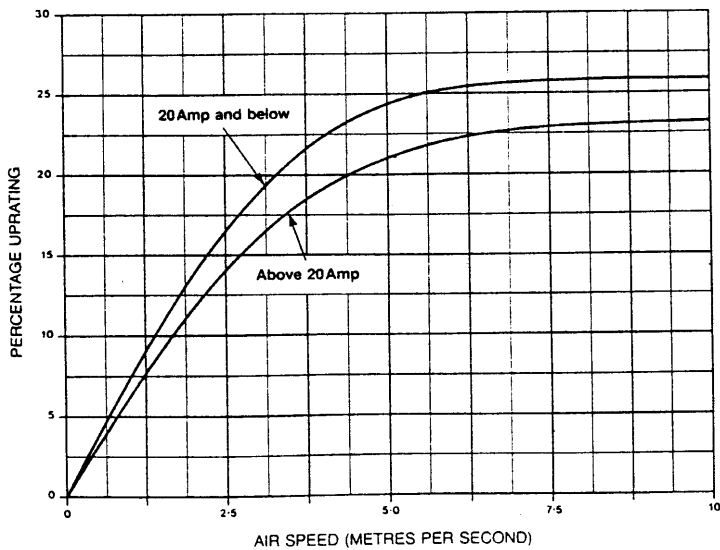
Type 'GSA'

De-rating at high ambients



Type 'GSA'

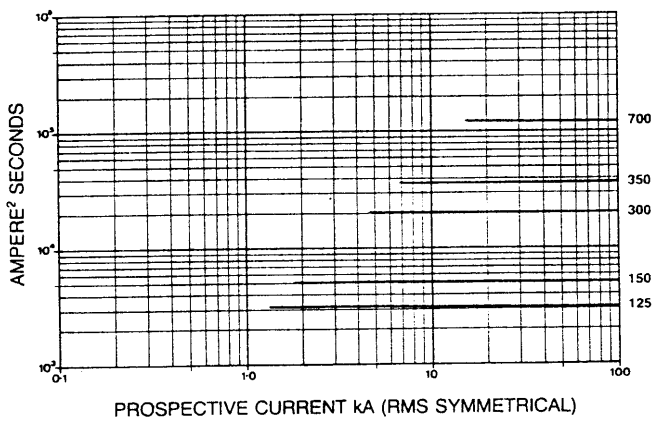
Forced air cooling up-rating curve



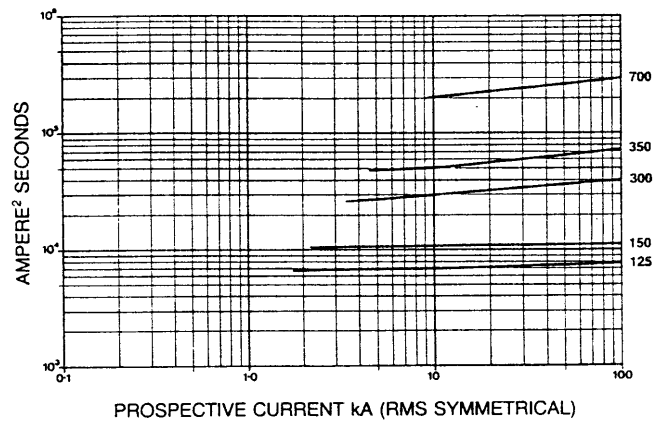
Type 'GSD'

I^2t variations with prospective current

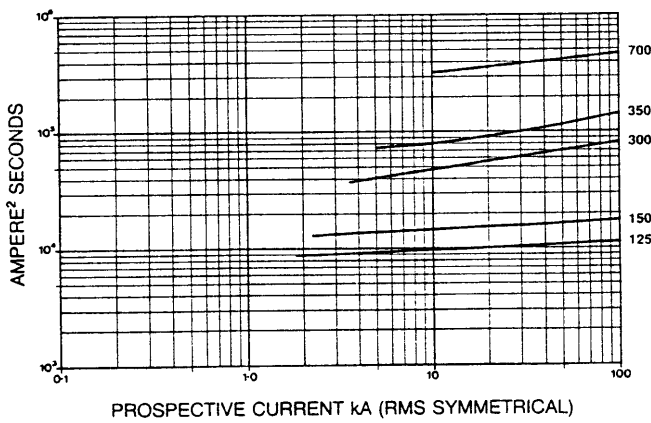
Pre-arcing



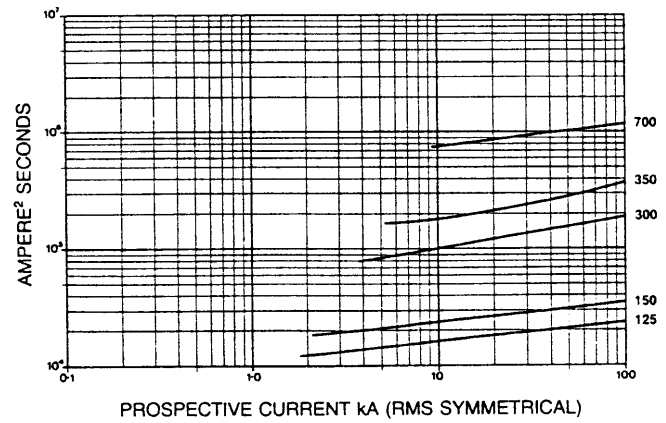
53 Volt RMS



106 Volt RMS

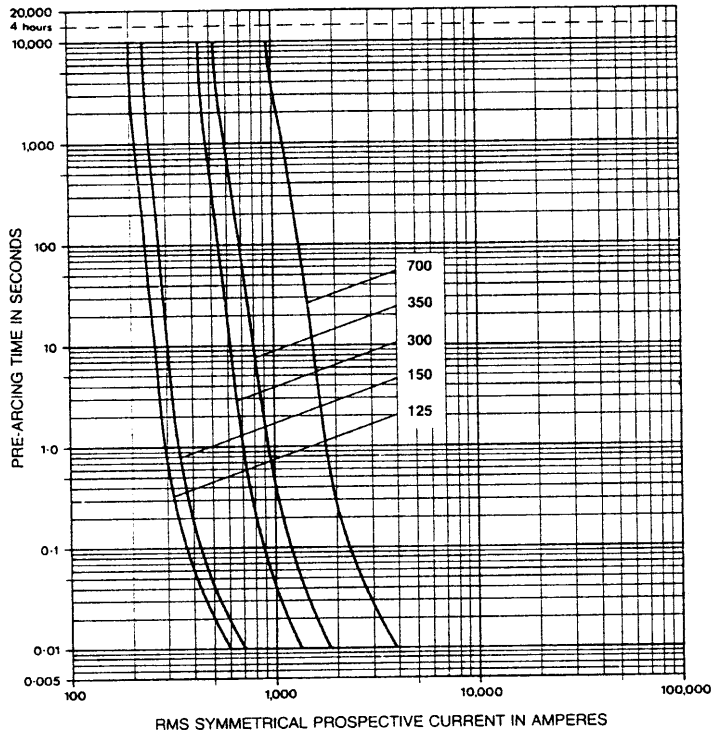


212 Volt RMS

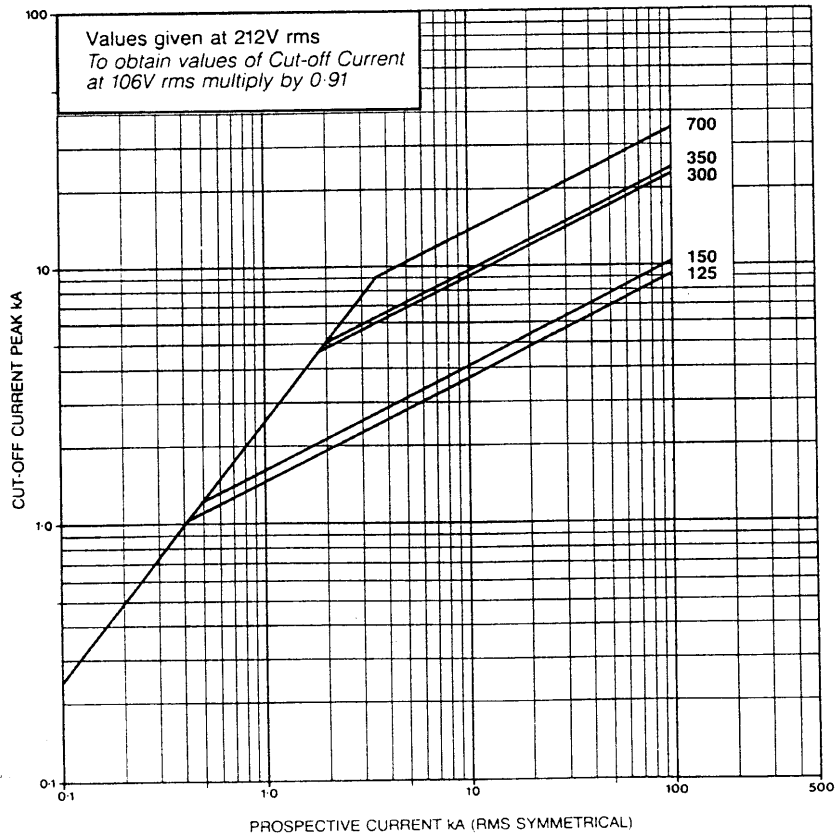


Characteristics

Type 'GSD'
Time/Current Characteristics
125-700 Amp



Type 'GSD'
Cut-off Current Characteristics
125-700 Amp



'GSB' Fast Acting HRC Fuse Links

Type 'GSB' 5-500 Amp

Fast acting fuse links, rated 5 - 500Amp.

A.C. rating: 600 Volt rms tested to 707 Volt rms.

D.C. rating: 400 Volt d.c. time constant 20ms.

Specification and List Numbers

Voltage Rating		Current Rating	List Number	Minimum Pre-Arcing I ² t	Total I ² t	Cut-Off Current	Power Dissipation		Top Cap Temp. Rise	Indicator Pack Ref. ‡	Dimensional Reference
Volt a.c. RMS	Volt d.c. @ 20ms	Amp		A ² sec	@ 100kA 600Volt RMS A ² sec	@ 100kA 600Volt RMS kA	@ 1in	@ 0.5 in	@ 20°C ambient °C		(Page 1/40)
		5	GSB5	0.57	15	0.75	2.1	0.4	26		
		10	GSB10	2.3	53	1.0	3.6	0.6	36	*	1
		15	GSB15	11	260	1.5	3.9	0.8	33		
		20	GSB20	28	580	1.9	7.3	1.2	52		
		25	GSB25	40	600	2.7	6.7	1.4	44		
ASTA Certified 600 also tested to 707	400	45	GSB45	170	2,300	4.4	10.0	2.0	60	GSIPBS	2
		50	GSB50	250	2,900	5.0	12.0	2.5	63		
		75	GSB75	1,000	11,000	7.0	12.5	2.5	47		
		100	GSB100	2,600	32,000	9.0	16.0	2.5	58		
		150	GSB150	5,500	49,000	10.0	26.0	4.0	62	GSIPBL	3
		200	GSB200	12,000	100,000	14.0	28.0	4.5	63		
		250	GSB250	25,000	170,000	17.0	37.0	6.5	76		
		300	GSB300	36,000	290,000	19.0	35.5	6.5	68		
		400	GSB400	62,000	480,000	24.0	62.0	11.5	85	GSIPBL	4
		450	GSB450	80,000	550,000	24.0	70.0	12.0	90		
		500	GSB500	100,000	610,000	27.0	80.0	13.0	90		

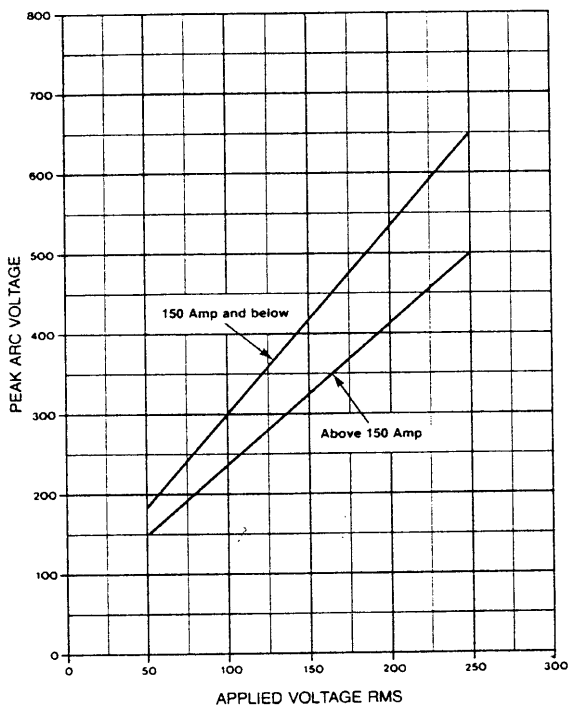
* Indicator pack not available

‡ Indicated fuse links.

"Add-on" indicator fuse link conversion kits comprising a trip indicator fuse link and a pair of easily assembled clips are available.

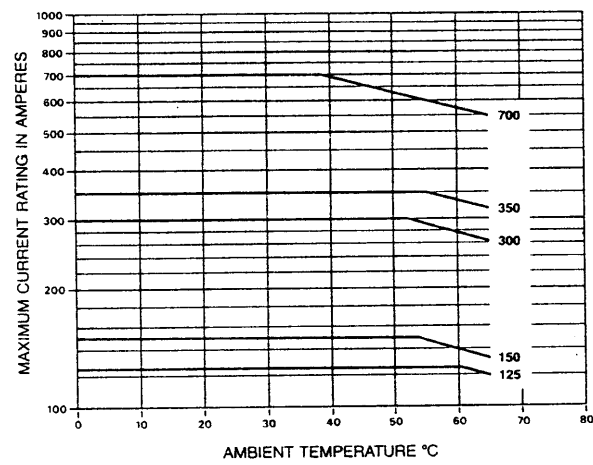
Type 'GSD'

Variation of arc voltage with applied voltage



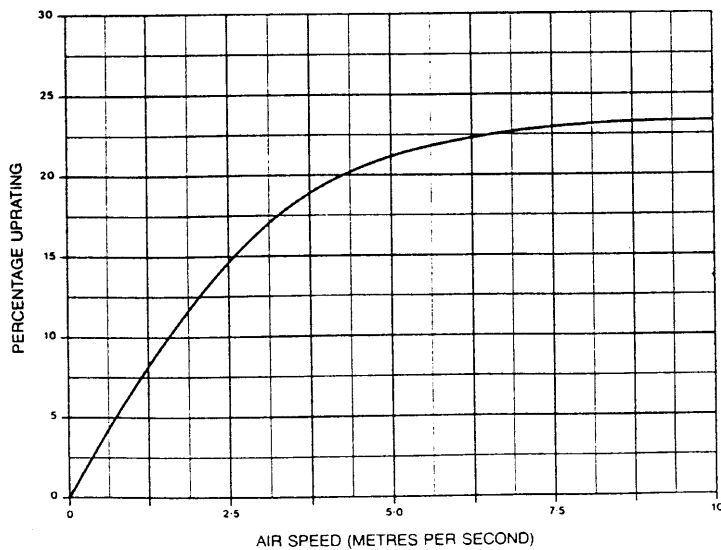
Type 'GSD'

De-rating at high ambients



Type 'GSD'

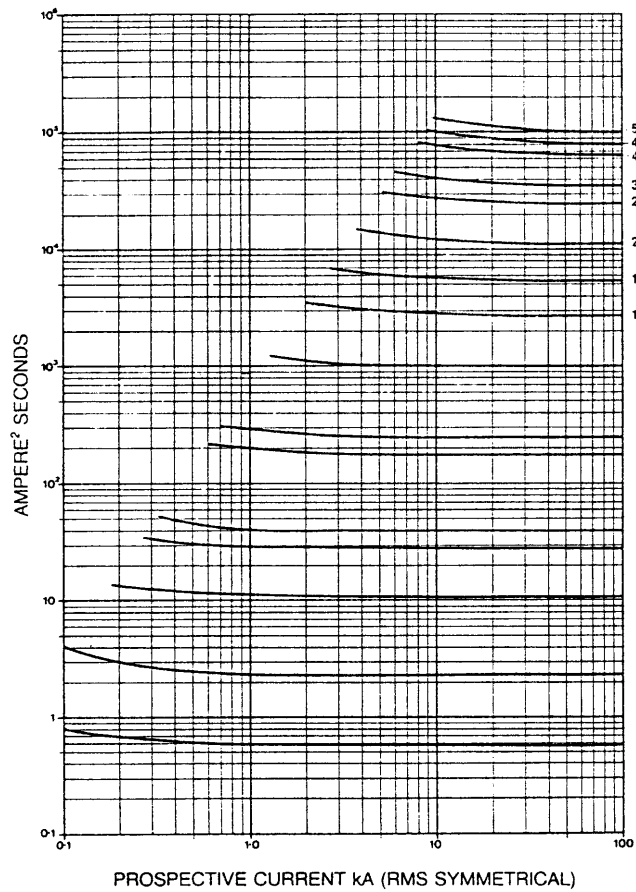
Forced air cooling up-rating curve



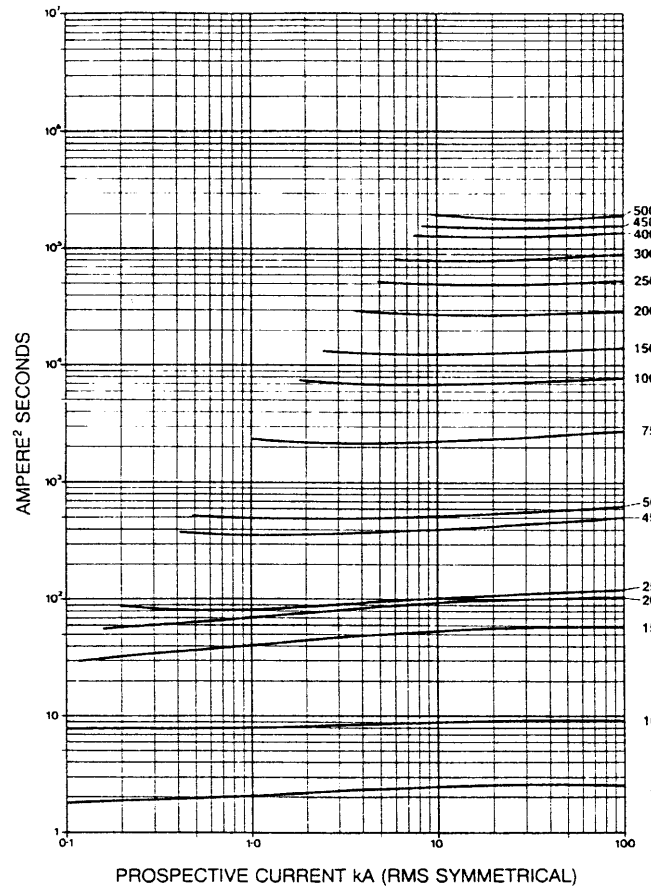
Type 'GSB'

I^2t variations with prospective current

Pre-arcing



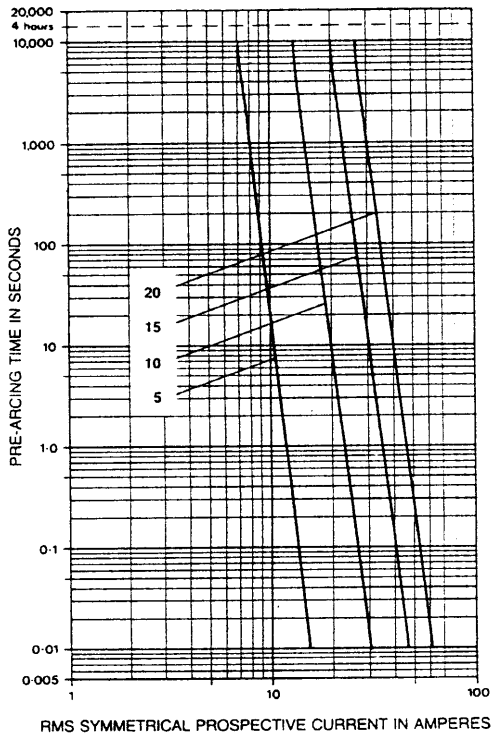
150 Volt RMS



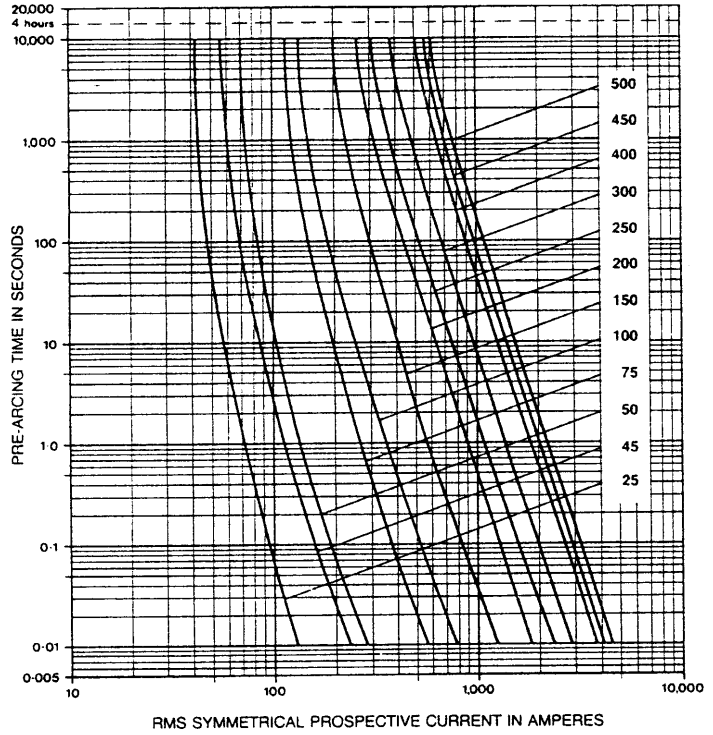
Characteristics

Type 'GSB'
Time/Current Characteristics
5-500 Amp

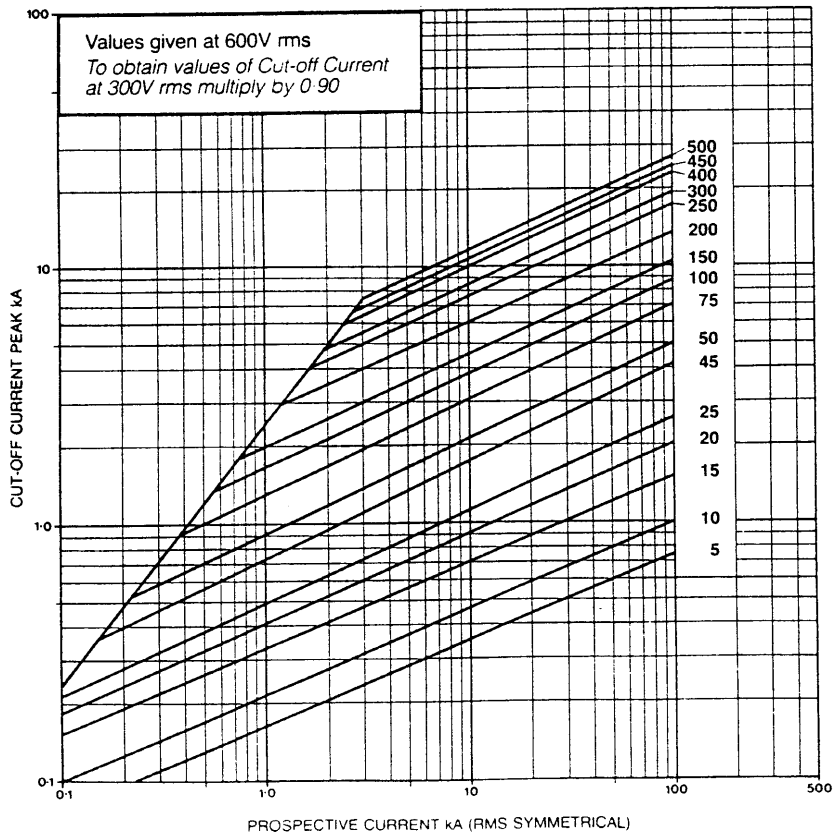
5-20 Amp



25-500 Amp

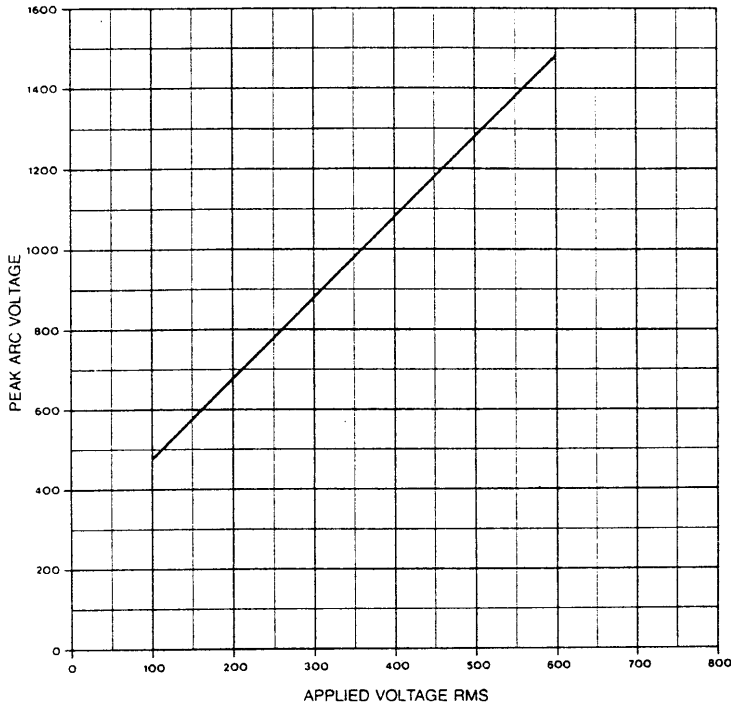


Type 'GSB'
Cut-off Current Characteristics
5-500 Amp



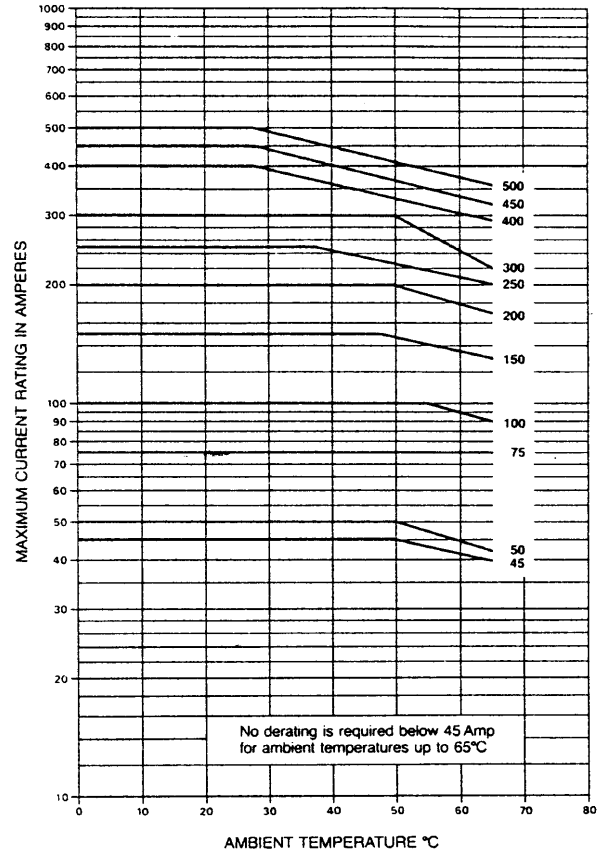
Type 'GSB'

Variation of arc voltage with applied voltage



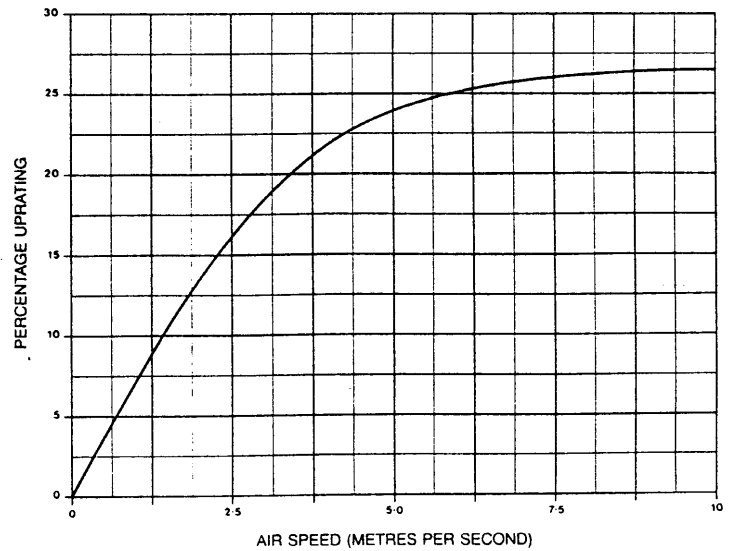
Type 'GSB'

De-rating at high ambients



Type 'GSB'

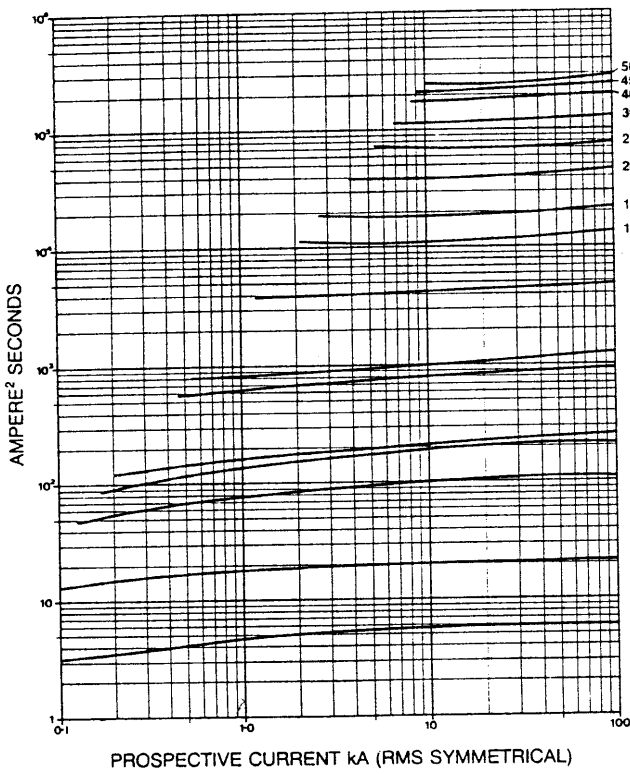
Forced air cooling up-rating curve



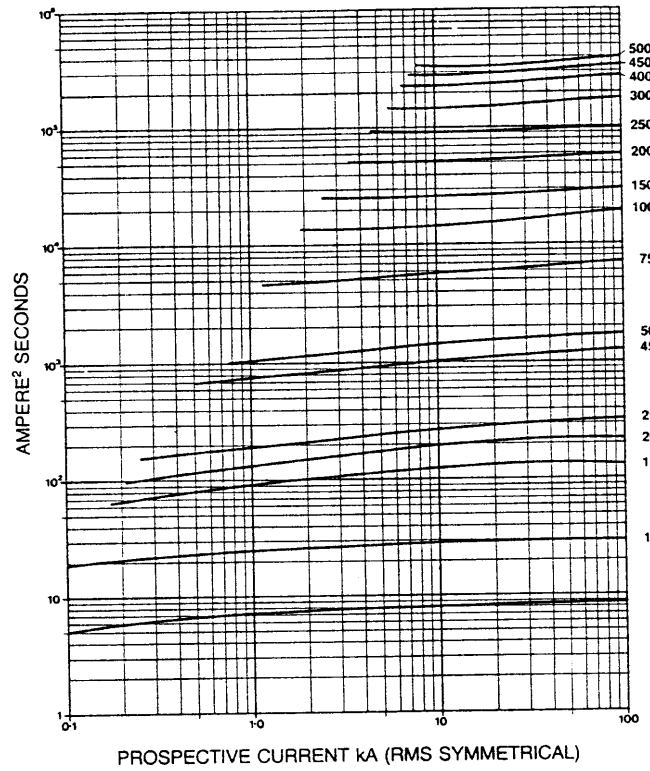
Type 'GSB'

I^2t variations with prospective current

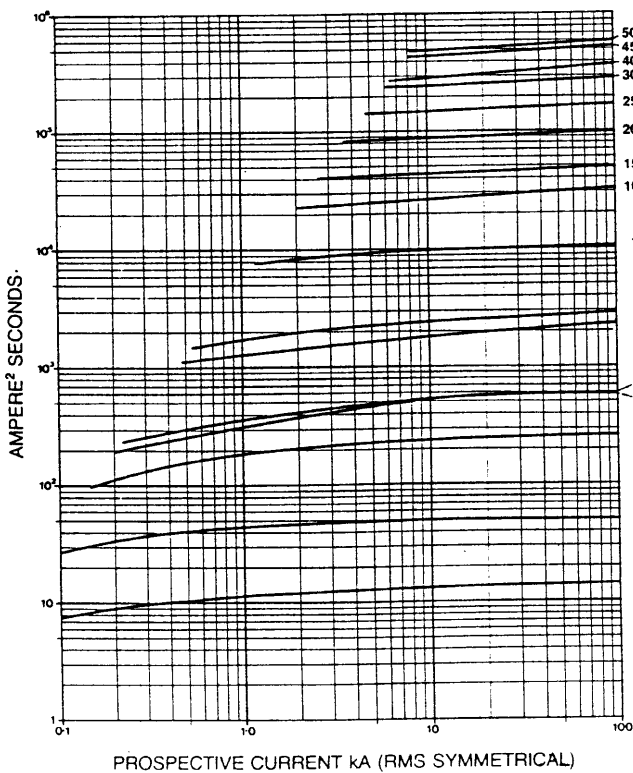
300 Volt RMS



415 Volt RMS

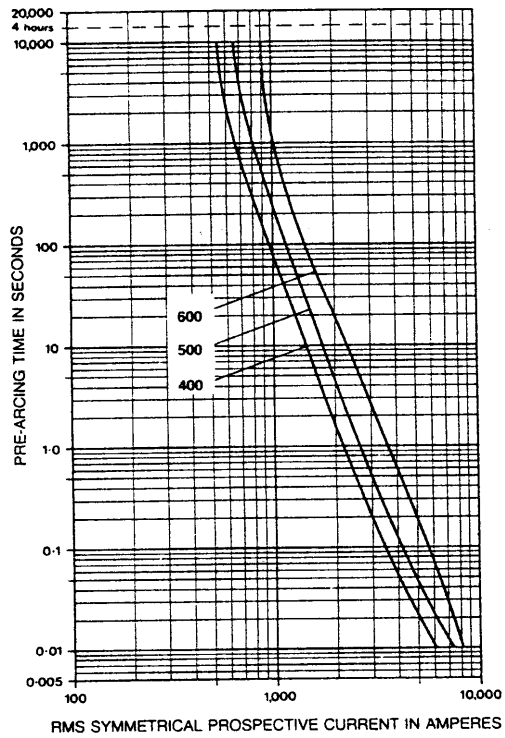


600 Volt RMS

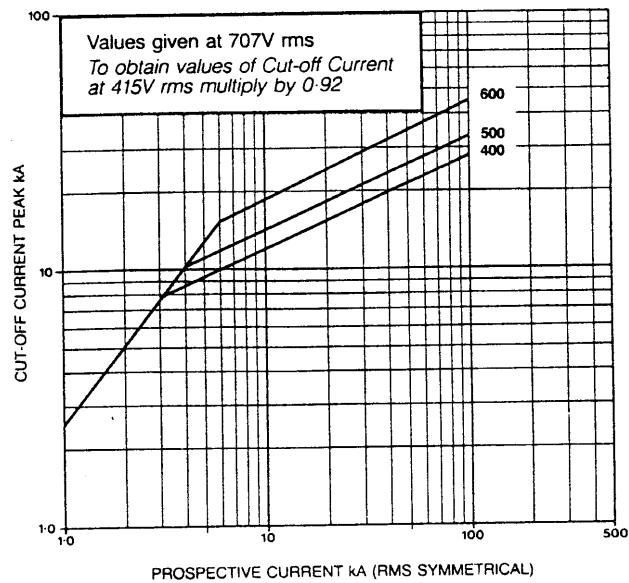


Characteristics

Type 'CGS1000'
Time/Current Characteristics
400-600 Amp



Type 'CGS1000'
Cut-off Current
Characteristics
400-600 Amp



'CGS1000' Fast Acting HRC Fuse Links

Type 'CGS1000' 400, 500 & 600 Amp

Fast acting fuse links, rated 400 - 600 Amp

A.C. rating: 600 Volt rms tested to 707 Volt rms.

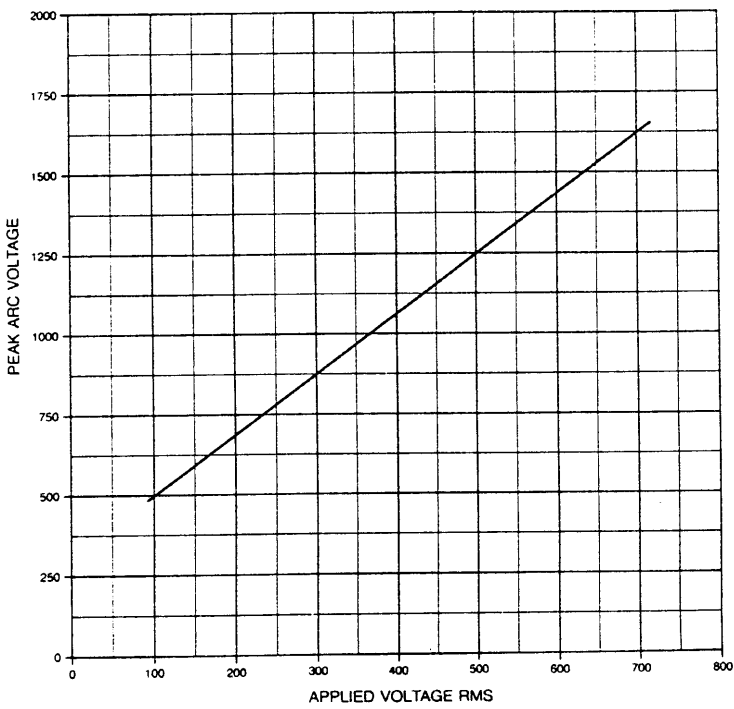
D.C. rating: 400 Volt d.c. time constant 20ms.

Specification and List Numbers

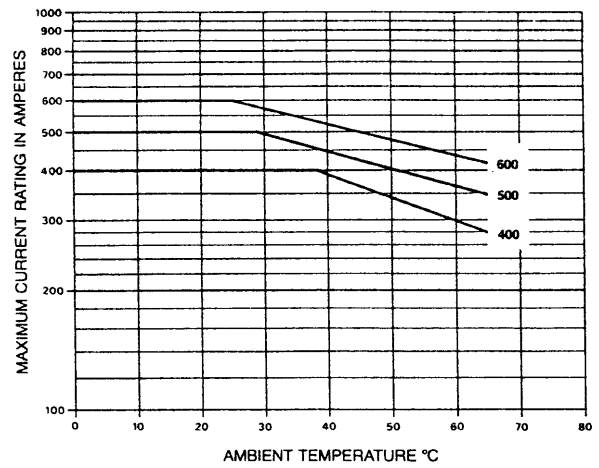
Voltage Rating		Current Rating	List Number	Minimum Pre-Arcing I ² t	Total I ² t	Cut-Off Current	Power Dissipation		Top Cap Temp. Rise	Dimensional Reference
Volt a.c. RMS	Volt d.c. @ 20ms	Amp		A ² sec	@ 100kA 600Volt RMS A ² sec	@ 100kA 600Volt RMS kA	@ In	@ 0.5 in	@ 20°C ambient °C	(Page 1/40)
ASTA Certified 600 also tested to 707	400	400	CGS1000/400	137,000	370,000	28.0	76.0	17.0	92	5
		500	CGS1000/500	248,000	740,000	33.0	84.0	16.0	92	
		600	CGS1000/600	390,000	150,000	44.0	91.0	17.0	93	

Note: Add-on indicator fuse link conversion kits are not available for this range of fuse links.
For indicated version order as CGS 1000/---.

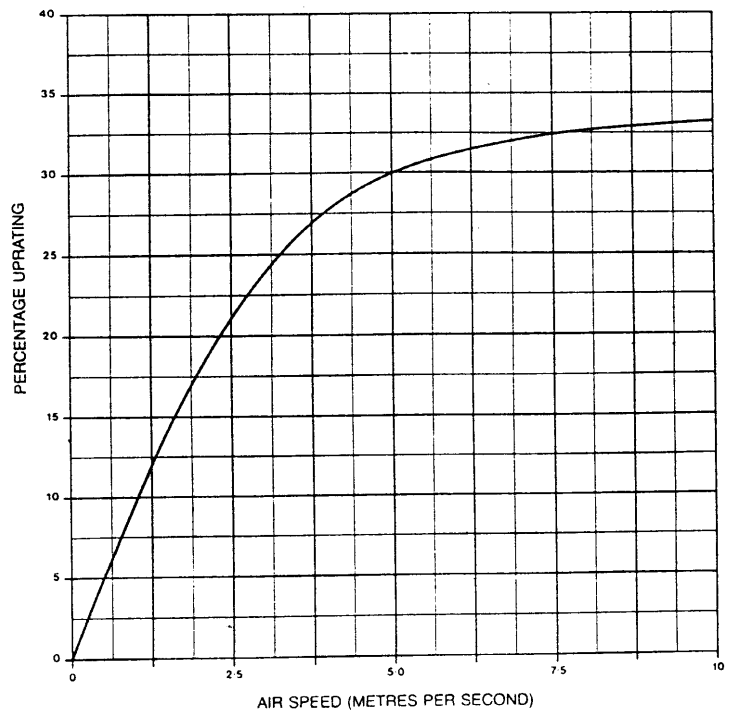
Type 'CGS1000'
Variation of arc voltage with
applied voltage



Type 'CGS1000'
De-rating at high ambients



Type 'CGS1000'
Forced air cooling
up-rating curve

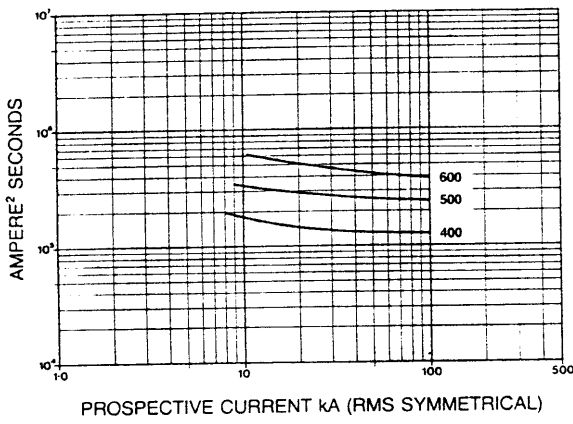


Type 'CGS1000'

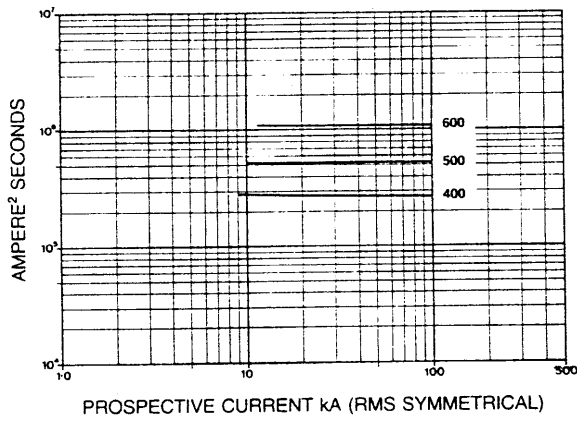
I^2t variations with prospective current

Pre-arcing

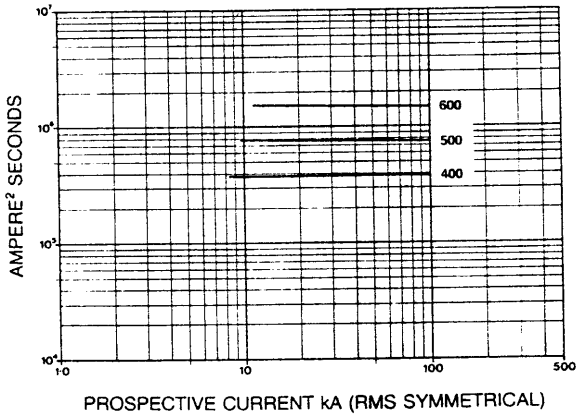
Pre-arcing



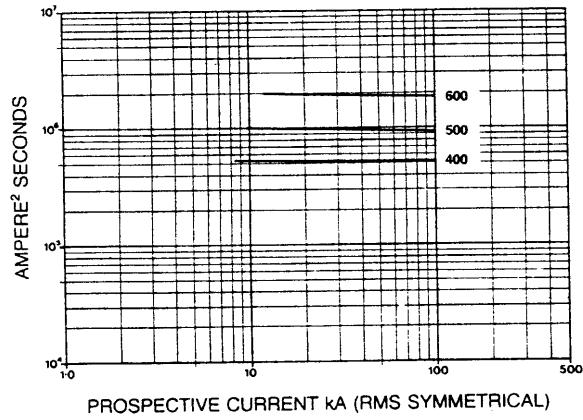
415 Volt RMS



600 Volt RMS



707 Volt RMS



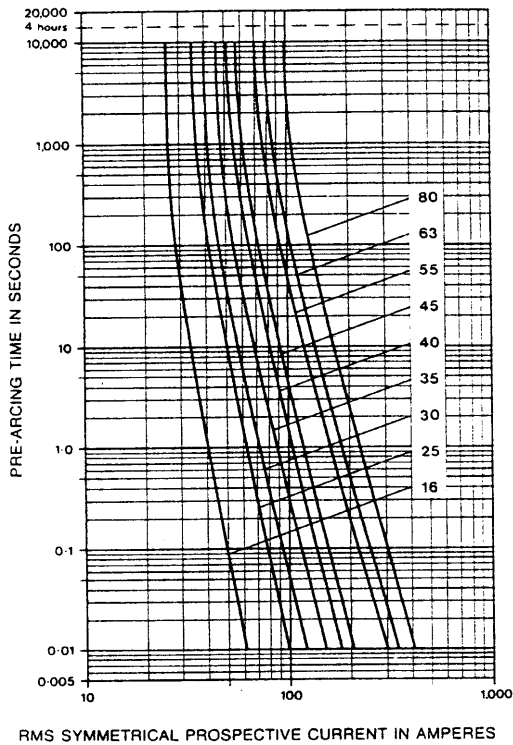
Characteristics

Type 'GSGB'

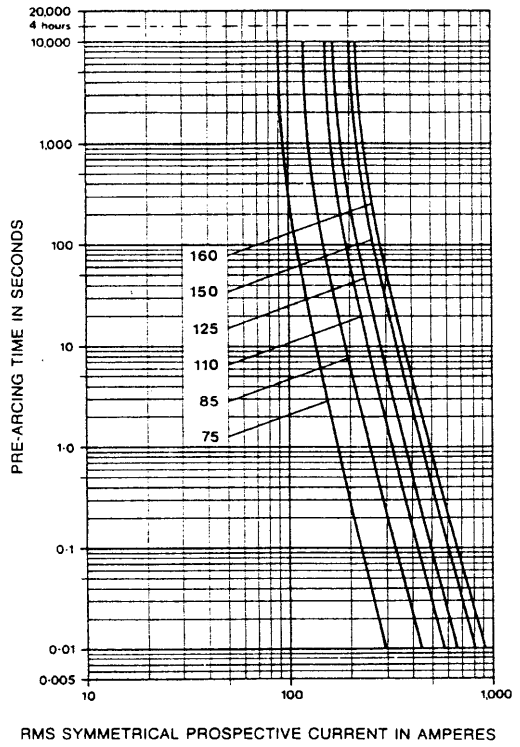
Time/Current Characteristics

16-250 Amp

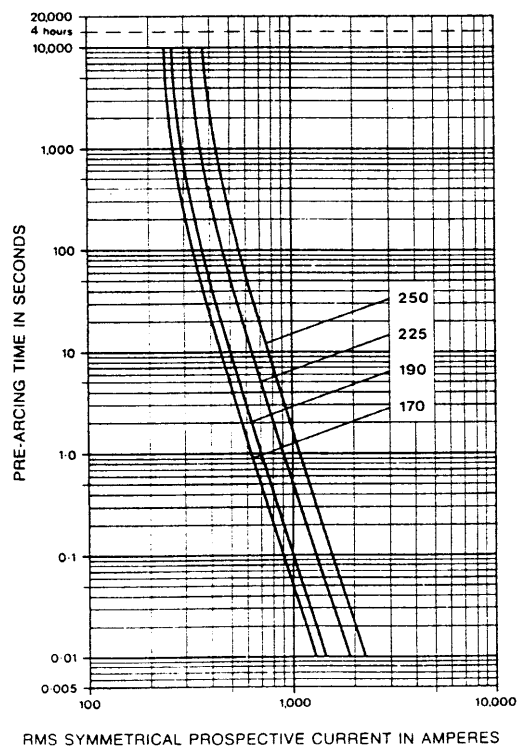
16-80 Amp



75-160 Amp



170-250 Amp



'GSGB' Ultra Fast Acting HRC Fuse Links

Specification and List Numbers

Type 'GSGB' 16-900 Amp

Ultra fast acting fuse links, rated 16 - 900 Amp.

A.C. rating: 660 Volt rms tested to 1000 Volt peak.

D.C. rating: 400 Volt d.c. time constant 20ms (16 - 160 Amp).

350 Volt d.c. time constant 20ms (170 - 900 Amp).

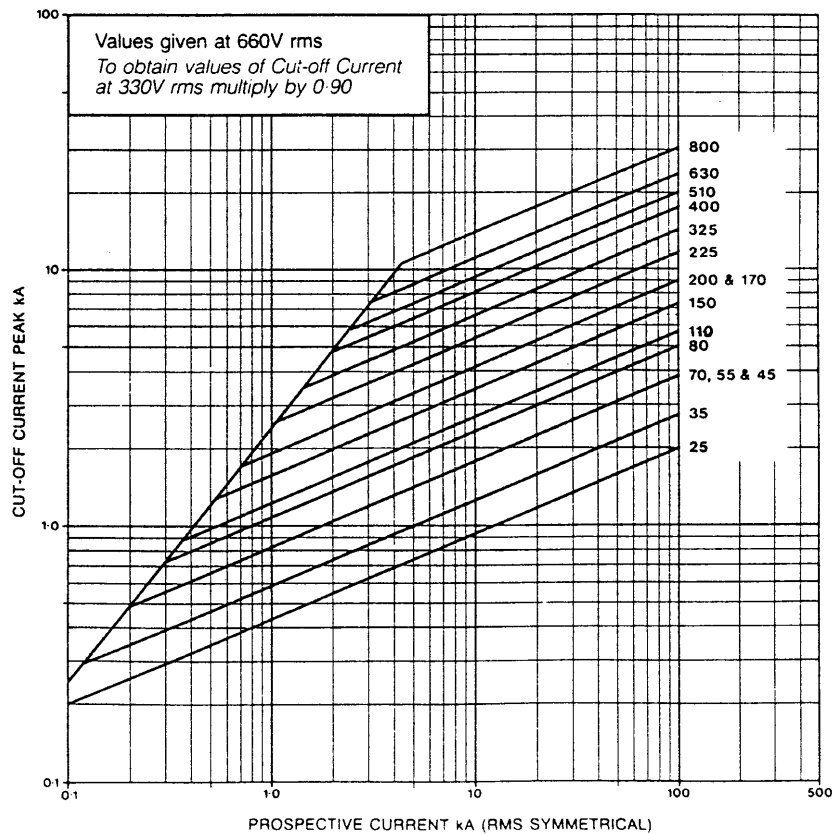
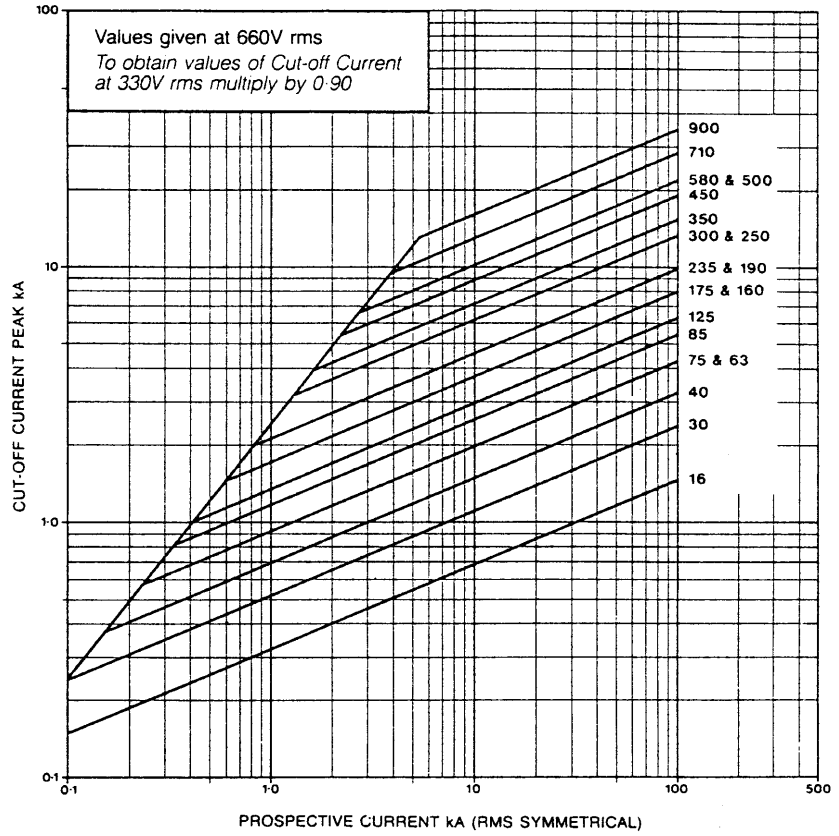
Voltage Rating		Current Rating	List Number	Minimum Pre-Arcing I ² t	Total I ² t	Cut-Off Current		Power Dissipation	Top Cap Temp. Rise	Indicator Pack Ref. ‡	Dimensional Reference
Volt a.c. RMS	Volt d.c. @ 20ms	Amp		A ² sec	@ 100kA 660 Volt RMS A ² sec	@ 100kA 660 Volt RMS kA	@ In	@ 0.5 in	@ 20°C ambient °C		
400		16	GSGB16	8	190	1.5	4.7	1.0	35	*	6
		25	GSGB25	23	320	2.0	8.3	1.5	44		
		30	GSGB30	36	450	2.4	9.6	1.7	48		
		35	GSGB35	70	570	2.7	9.3	1.6	48		
		40	GSGB40	110	800	3.2	9.3	1.6	48	GSIPBS	6
		45	GSGB45	140	1,200	3.8	10.8	1.9	50		
		55	GSGB55	205	1,800	3.8	14.7	2.5	58		
		63	GSGB63	280	2,400	4.3	16.4	2.6	62		
		80	GSGB80	460	3,500	5.0	23.0	3.6	79		
		75	GSGB75	280	2,100	4.3	23.0	3.7	83		
		85	GSGB85	560	5,100	5.4	20.0	3.4	58		
		110	GSGB110	800	6,600	5.7	30.0	5.2	88	GSIPBS	7
		125	GSGB125	1,100	8,100	6.4	37.0	5.7	88		
		150	GSGB150	1,800	12,500	7.4	39.0	6.3	87		
		160	GSGB160	2,200	17,000	8.0	42.0	6.6	98		
	350		170	GSGB170	3,200	39,500	9.0	33.0	5.8	63	
		190	GSGB190	4,200	45,500	9.9	43.0	7.3	76	GSIPBL	8
		225	GSGB225	7,400	80,000	11.8	45.0	7.6	80		
		250	GSGB250	11,000	105,000	13.2	46.0	7.8	88		
		175	GSGB175	2,200	40,000	8.0	41.0	7.4	58		
		200	GSGB200	3,200	45,500	9.0	56.0	8.9	63		
		235	GSGB235	5,700	59,000	9.9	54.0	9.0	84		
		300	GSGB300	10,000	120,000	13.2	71.0	11.2	86		
		325	GSGB325	13,000	160,000	14.2	73.0	11.5	87	GSIPBL	9
		350	GSGB350	16,500	185,000	15.3	68.0	11.0	90		
	400	GSGB400	23,000	270,000	17.5	83.0	13.2	95			
	450	GSGB450	36,000	340,000	19.0	84.0	13.4	96			
	500	GSGB500	44,000	450,000	22.0	95.0	15.0	104			
	510	GSGB510	40,000	480,000	20.0	98.0	17.0	72			
	580	GSGB580	52,000	570,000	22.0	111.0	20.0	81	NOT AVAILABLE	10	
	630	GSGB630	66,000	700,000	24.0	117.0	21.0	85	ORDER		
	710	GSGB710	93,000	1,100,000	28.0	126.0	22.0	92	GSGB		
	800	GSGB800	115,000	1,350,000	30.5	150.0	25.0	102			
	900	GSGB900	170,000	1,800,000	35.0	146.0	26.0	104			

* Indicator pack should not be used with GSGB16.

‡ Indicated fuse links. "Add-on" indicator fuse link conversion kits comprising a trip indicator fuse link and a pair of easily assembled clips are available.

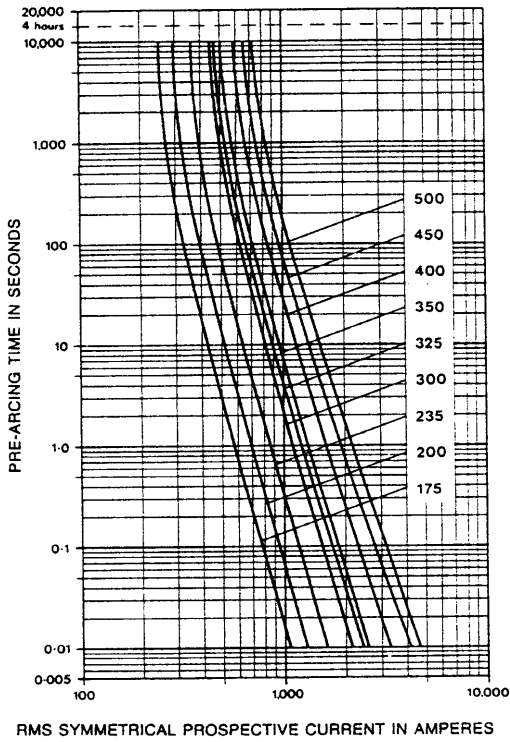
Type 'GSGB'
Cut-off Current Characteristics
16-900 Amp

To aid references, characteristics feature alternate ratings.

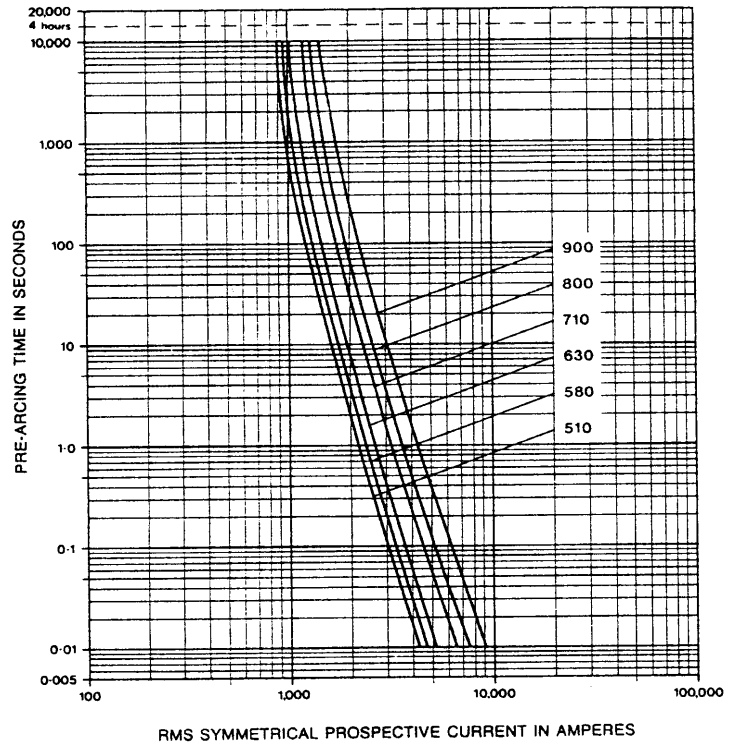


Type 'GSGB'
 Time/Current Characteristics
 175-900 Amp

175-500 Amp



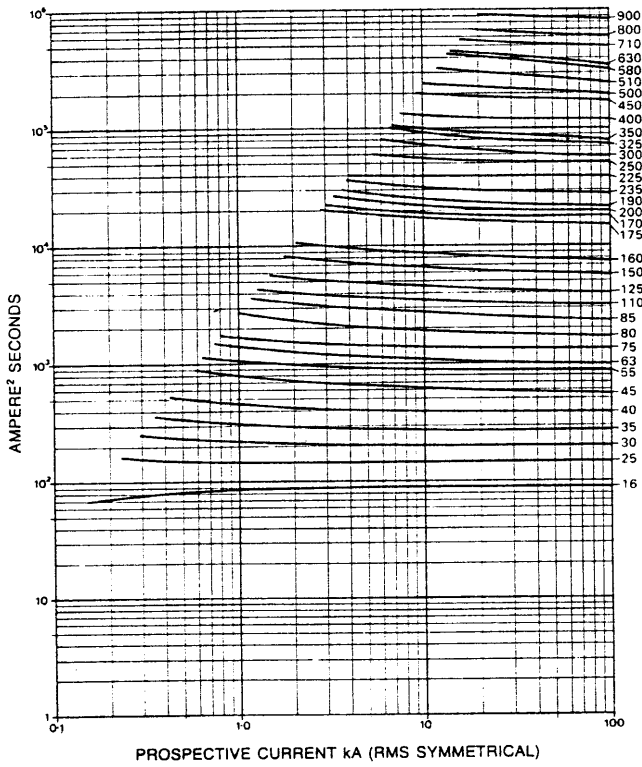
510-900 Amp



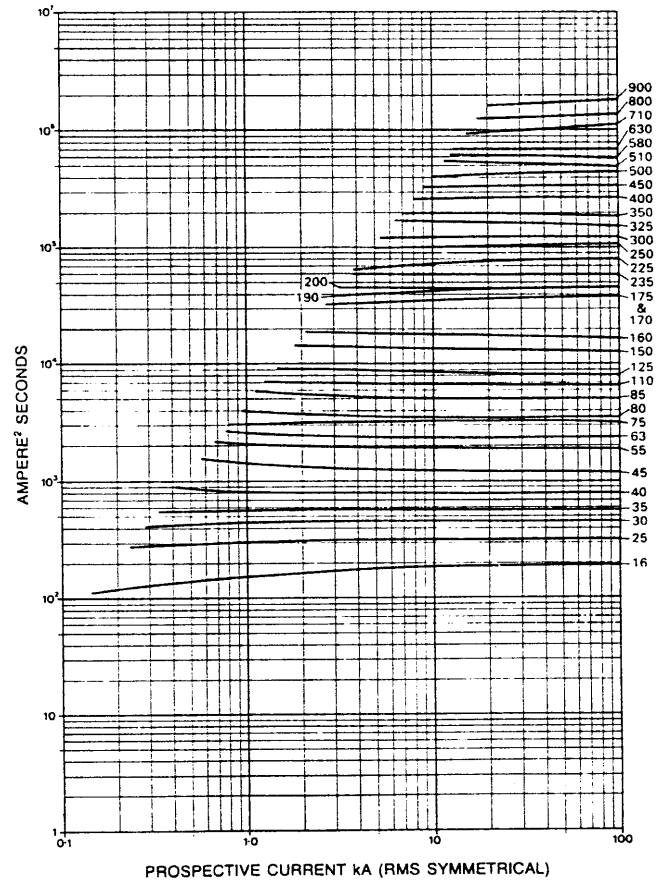
Type 'GSGB'

I^2t variations with prospective current

415 Volt RMS



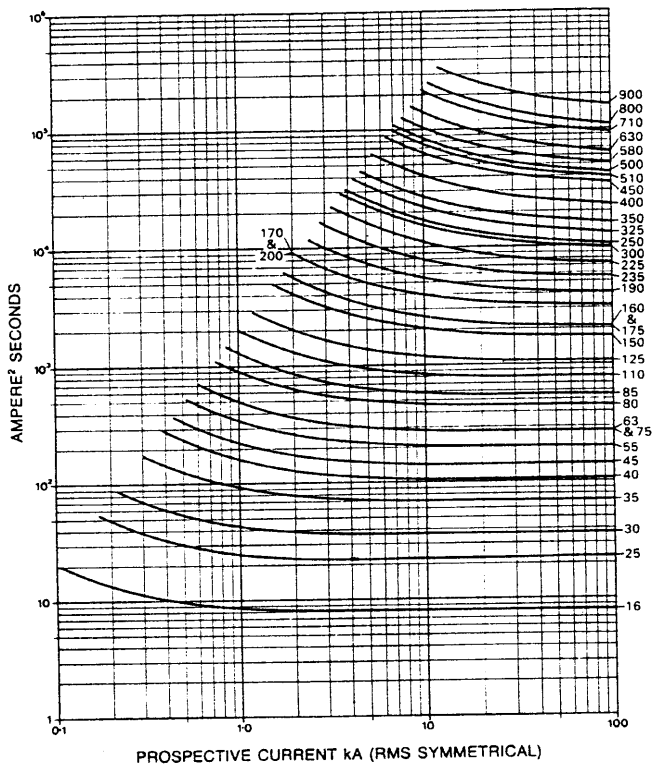
660 Volt RMS



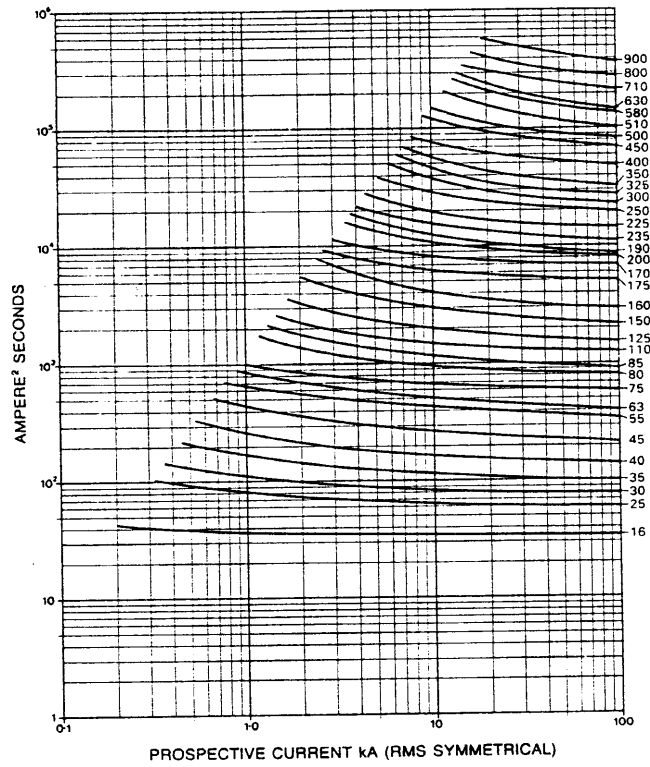
Type 'GSGB'

I^2t variations with prospective current

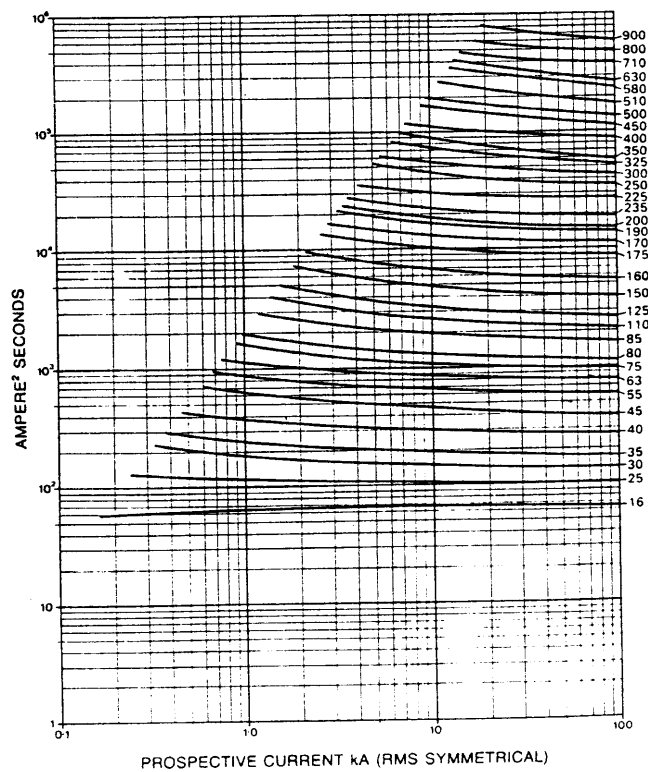
Pre-arcing



165 Volt RMS



330 Volt RMS



'GSMJ' & 'GSMK' Ultra Fast Acting HRC Fuse Links

Specification and List Numbers

Type 'GSMJ' & Type 'GSMK' 32-1200 Amp

Ultra fast acting fuse links, rated 32 - 1200 Amp.

A.C. rating: 'GSMJ' - 800 Volt rms tested to 880 Volt rms.

'GSMK' - 1000 Volt rms tested to 1100 Volt rms.

D.C. rating: 'GSMJ' - 500 Volt d.c. time constant 20ms.

'GSMK' - 700 Volt d.c. time constant 20ms.

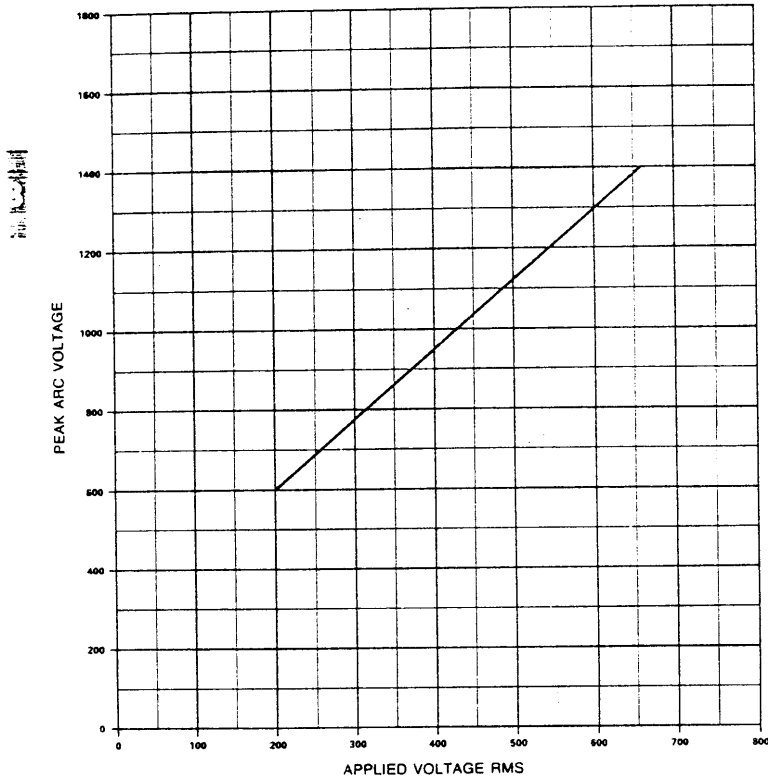
Voltage Rating		Current Rating	List Number	Minimum Pre-Arcing I ² t	Total I ² t @ 100kA*	Cut-Off Current @ 100kA*	Power Dissipation		Top Cap Temp. Rise @ 20°C ambient	Dimensional Reference
Volt a.c. RMS	Volt d.c. @ 20ms	Amp		A ² sec	A ² sec	kA	@ In	@ 0.5 in	°C	(Page 1/42)
ASTA Certified 800 also tested to 880	500	63	GSMJ63	450	8,500	5.8	16	3.0	65	11
		120	GSMJ120	1,800	32,400	9.0	28	5.5	65	12
		180	GSMJ180	4,200	66,600	11.3	43	9.0	68	13
		240	GSMJ240	7,500	110,000	13.0	56	11.0	68	14
		300	GSMJ300	12,000	165,000	15.6	68	13.5	96	15
		350	GSMJ350	17,400	230,000	17.2	80	16.0	84	16
		400	GSMJ400	24,000	304,000	19.4	91	18.0	99	
		460	GSMJ460	32,000	384,000	21.0	105	21.0	89	
		520	GSMJ520	40,900	478,000	22.5	117	23.0	76	17
		580	GSMJ580	51,000	675,000	24.0	137	27.0	92	
		630	GSMJ630	61,700	690,000	25.6	145	29.0	84	
		680	GSMJ680	74,900	806,000	27.4	155	31.0	104	
		800	GSMJ800	138,000	1,408,000	33.3	157	31.5	90	
1000	GSMJ1000	220,000	2,080,000	39.0	195	38.0	80	18		
1200	GSMJ1200	314,000	2,880,000	43.5	233	46.0	110			
ASTA Certified 1000 also tested to 1100	700	32	GSMK32	57	800	2.7	11	2.0	52	
		45	GSMK45	180	2,540	4.0	15	3.0	61	11
		63	GSMK63	450	6,200	5.4	22	4.2	79	
		120	GSMK120	1,800	24,000	8.2	39	7.5	67	12
		180	GSMK180	4,200	49,000	10.4	58	11.5	72	13
		240	GSMK240	7,500	81,600	12.8	77	14.0	83	14
		300	GSMK300	12,000	120,000	14.7	95	19.0	90	15
		350	GSMK350	17,400	166,000	16.6	111	22.0	91	16
		400	GSMK400	24,000	223,000	18.0	127	24.0	90	
		460	GSMK460	32,000	285,000	20.0	145	28.0	120	
		520	GSMK520	40,900	348,000	21.3	164	32.0	95	17
		580	GSMK580	51,000	425,000	22.8	187	36.0	96	
		630	GSMK630	61,700	508,000	23.8	198	40.0	98	
680	GSMK680	74,900	590,000	25.7	213	42.0	115			
800	GSMK800	138,000	1,024,000	30.3	215	43.0	105			
1000	GSMK1000	220,000	1,520,000	36.2	255	48.0	93	18		
1200	GSMK1200	314,000	2,091,000	40.0	300	54.0	110			

* GSMJ at 800 Volt RMS
GSMK at 1000 Volt RMS

Note: Add-on indicator fuse link conversion kits are not available for this range of fuse links.
For indicated versions order as GSMJ/--- or GSMK/---

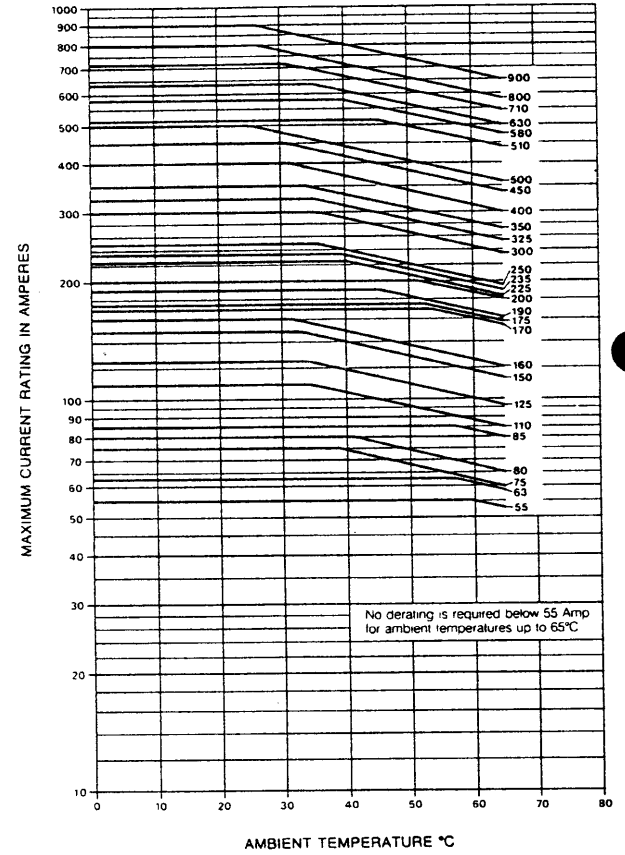
Type 'GSGB'

Variation of arc voltage with applied voltage

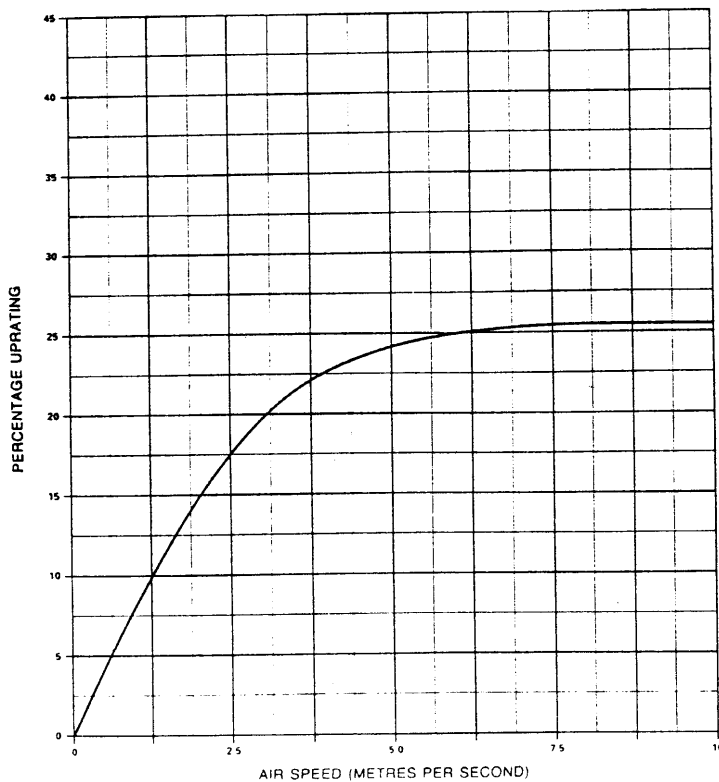


Type 'GSGB'

De-rating at high ambients

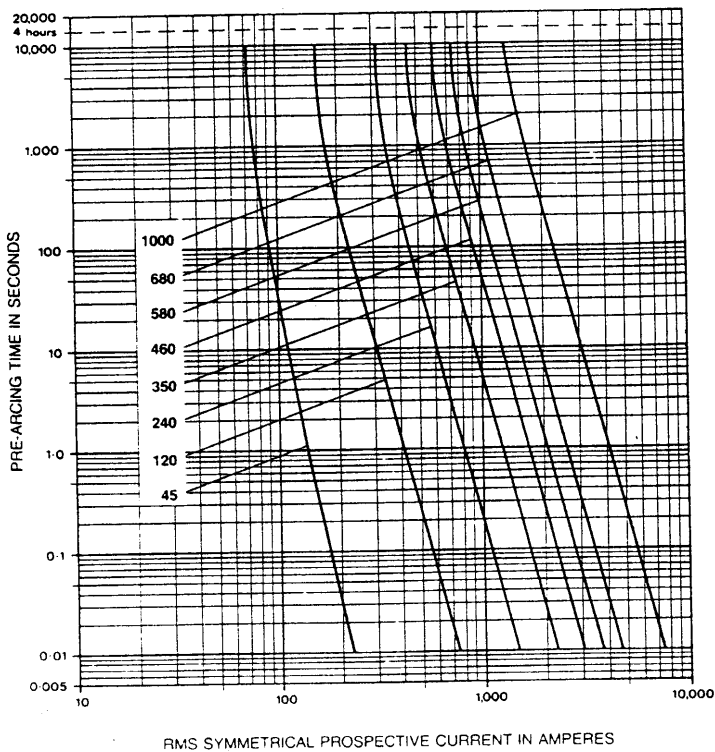
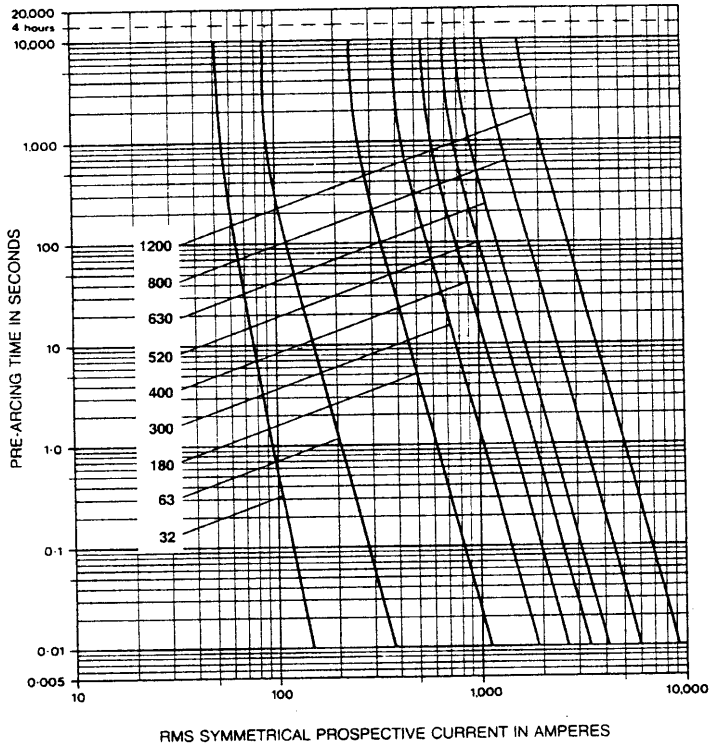


Type 'GSGB'
Forced air cooling
up-rating curve



Type 'GSMK'
 Time/Current Characteristics
 32-1200 Amp

To aid references, characteristics feature alternate ratings.



Characteristics

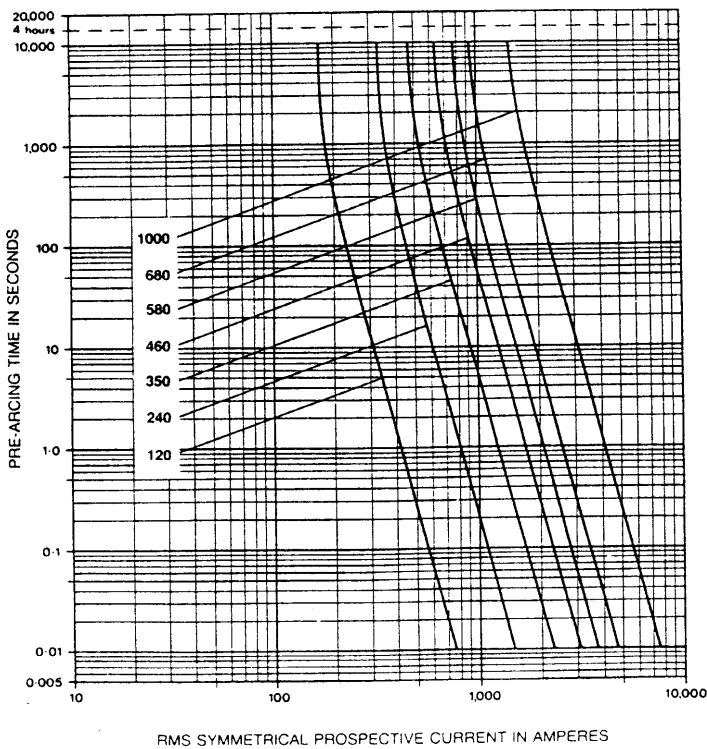
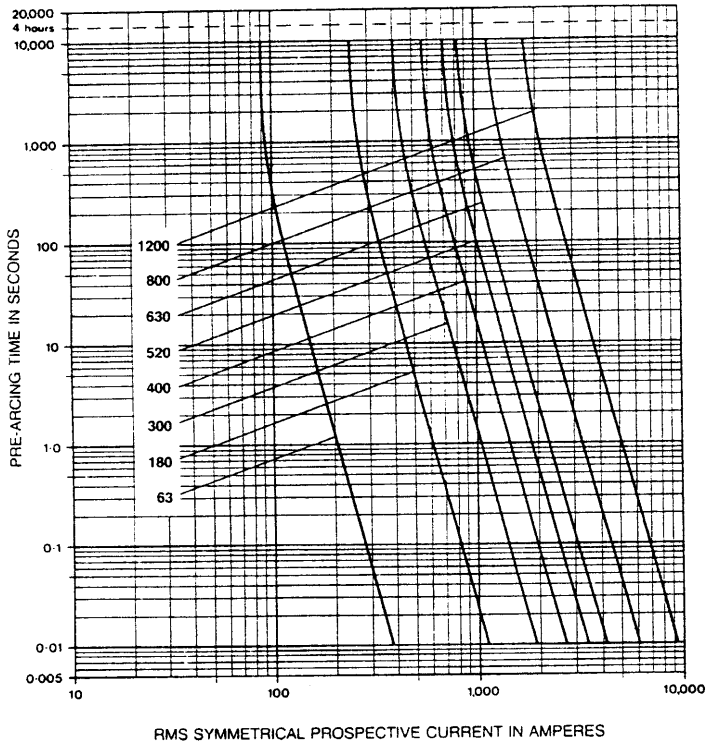
Type 'GSMJ'

Time/Current Characteristics

63-1200 Amp

To aid references, characteristics feature alternate ratings.

1790

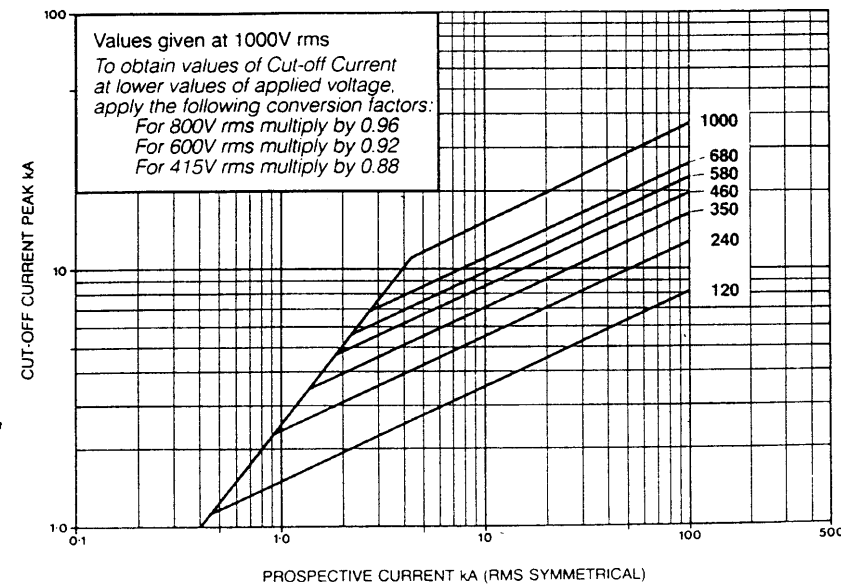
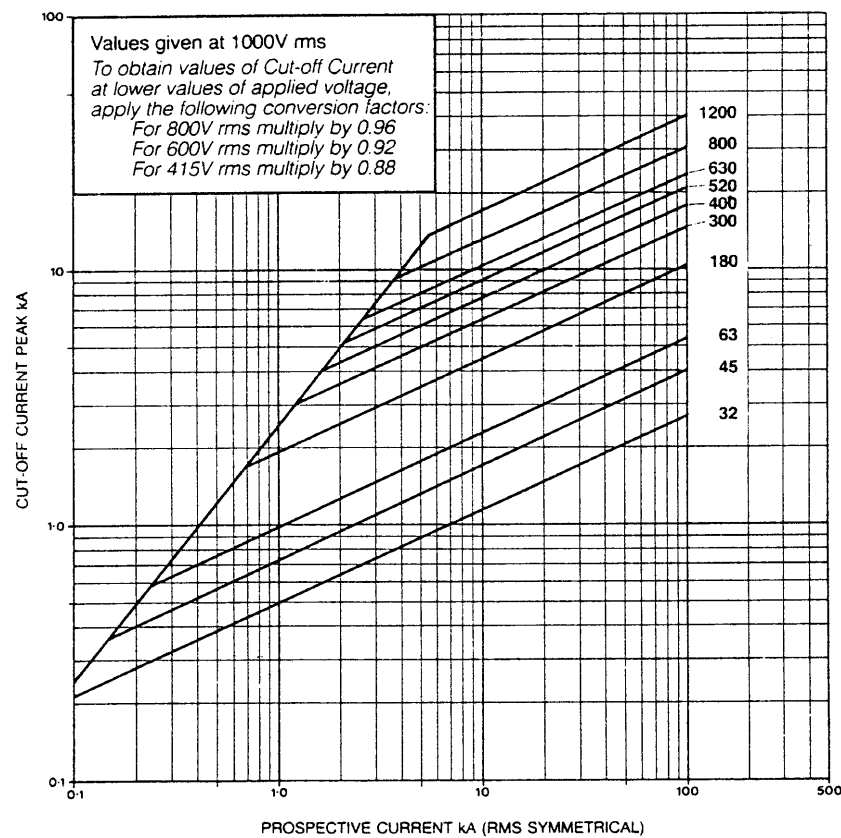


Type 'GSMK'

Cut-off Current Characteristics

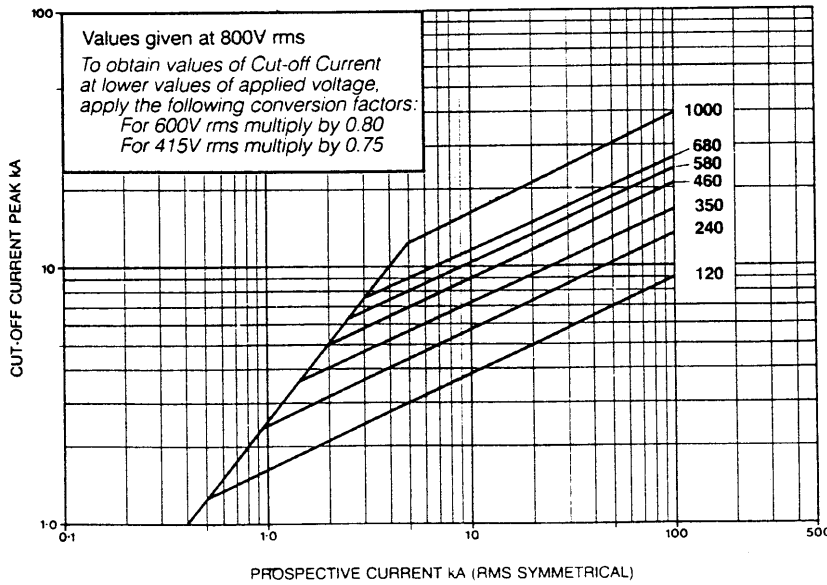
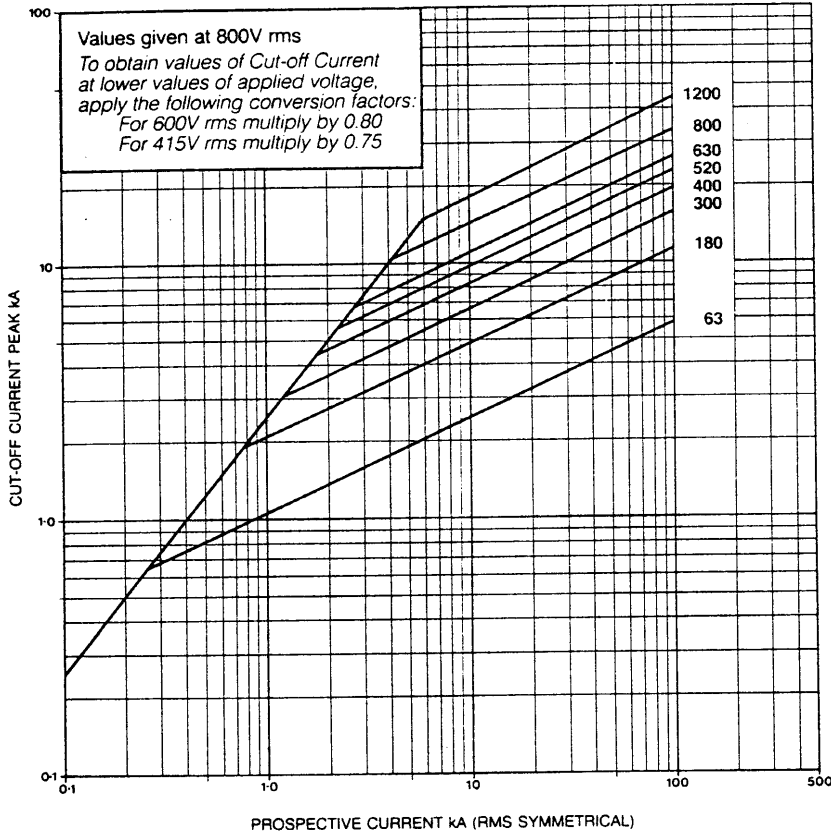
32-1200 Amp

To aid references, characteristics of ratings above 120 Amp alternate between the tables.



Type 'GSMJ'
Cut-off Current Characteristics
63-1200 Amp

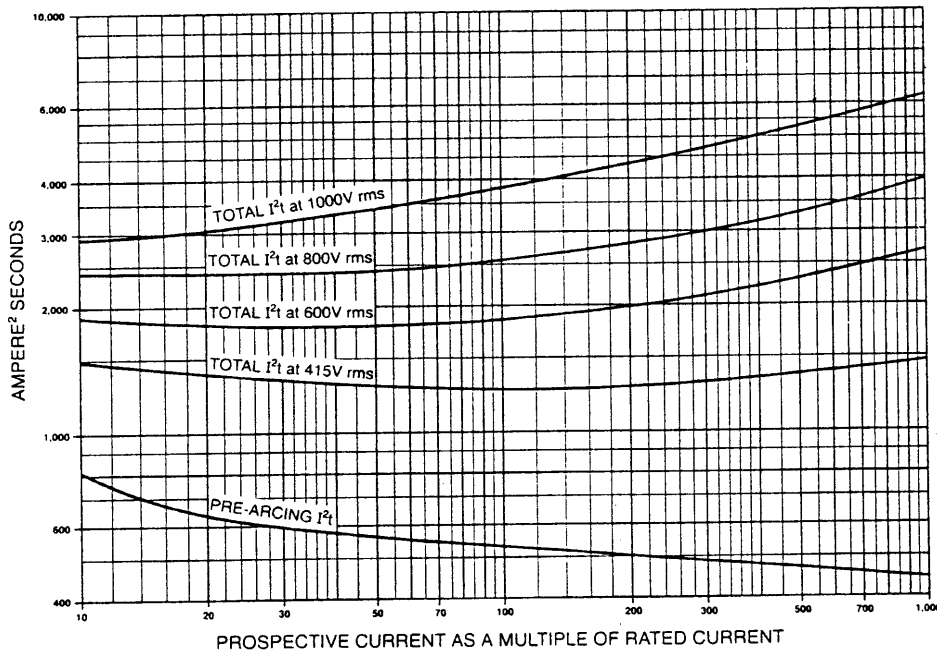
To aid references, characteristics feature alternate ratings.



Type 'GSMK'

I^2t variations with prospective current

Tested at 0.2 power factor.
 (For circuits of power factor ≥ 0.4 Total I^2t values are reduced by 20%).



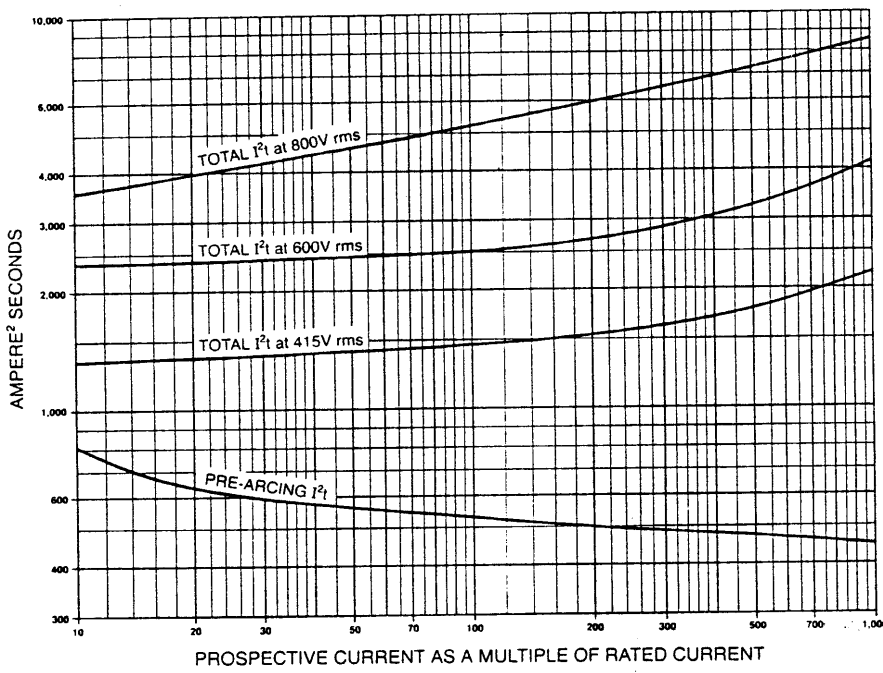
Pre-arcing I^2t or Total I^2t of given fuse link rating is obtained by reading off value on appropriate curve and multiplying by Factor 'A' from Table below.

Fuse Link Rating Amp	32	45	63	120	180	240	300	350	400	460	520	580	630	680	800	1000	1200
Factor 'A'	0.13	0.41	1	4	9	16	25	36	49	64	81	100	121	144	256	400	576

Type 'GSMJ'

I^2t variations with prospective current

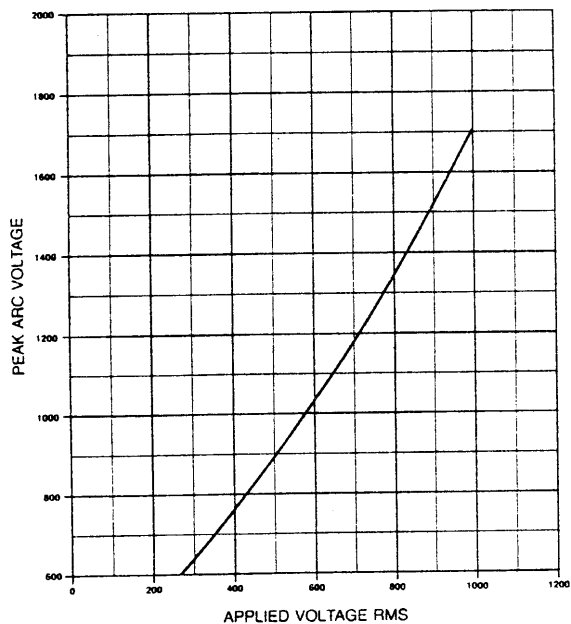
Tested at 0.2 power factor.
 (For circuits of power factor ≥ 0.4 Total I^2t values are reduced by 20%).



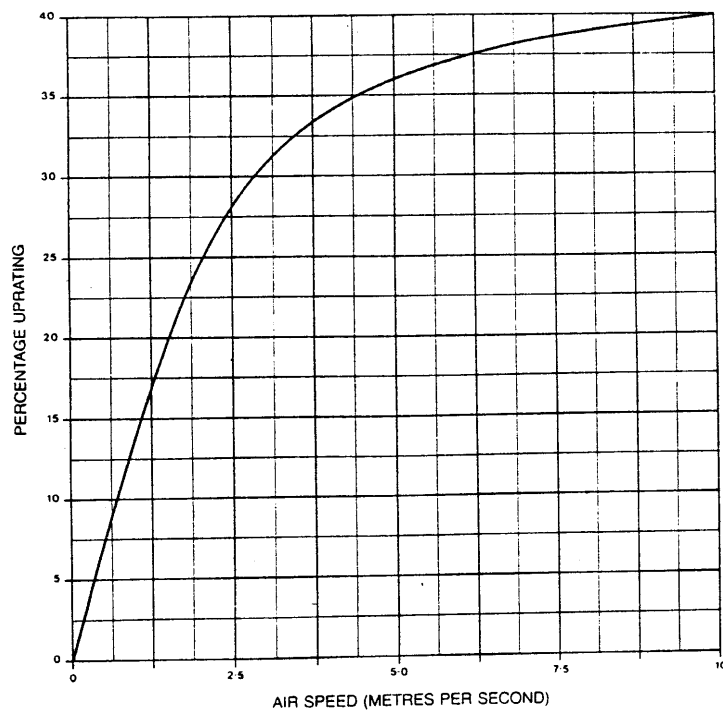
Pre-arcing I^2t or Total I^2t of given fuse link rating is obtained by reading off value on appropriate curve and multiplying by Factor 'A' from Table below.

Fuse Link Rating Amp	63	120	180	240	300	350	400	460	520	580	630	680	800	1000	1200
Factor 'A'	1	4	9	16	25	36	49	64	81	100	121	144	256	400	576

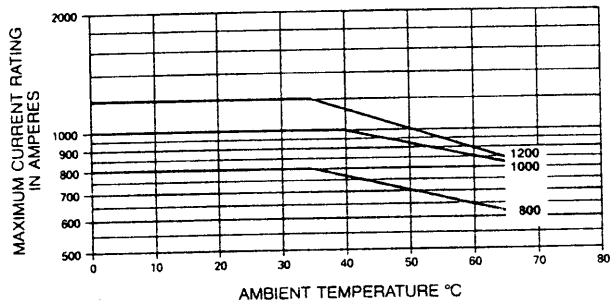
Type 'GSMJ' & 'GSMK'
Variation of arc voltage with
applied voltage



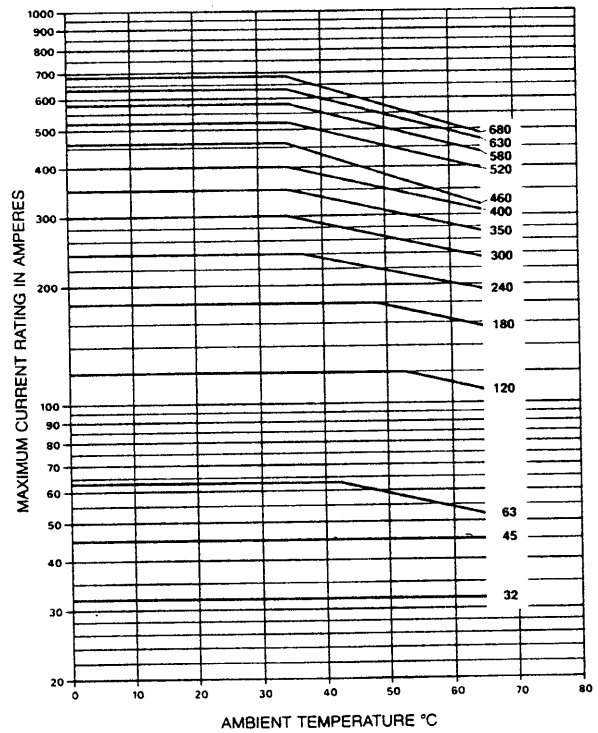
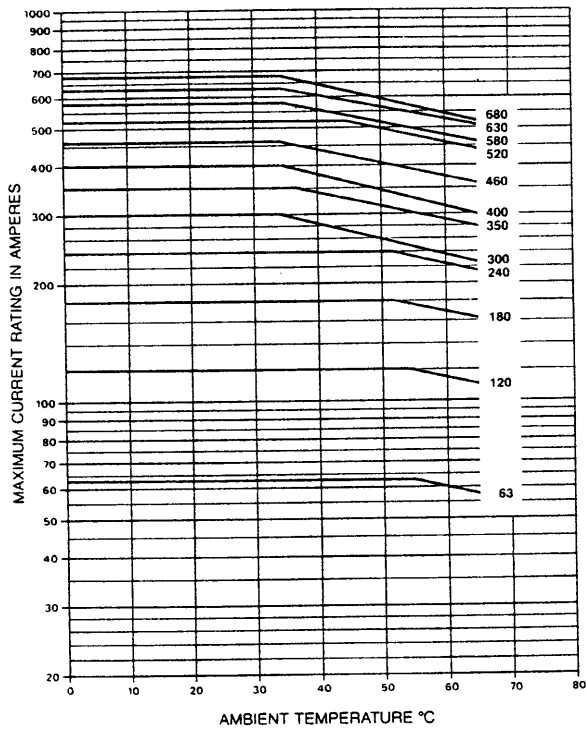
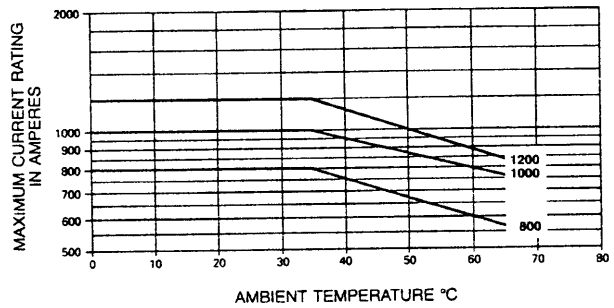
Type 'GSMJ' & 'GSMK'
Forced air cooling
up-rating curve



Type 'GSMJ'
De-rating at high ambients



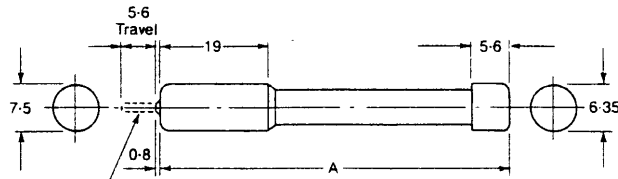
Type 'GSMK'
De-rating at high ambients



Trip Indicator Fuse Links

A.C. RMS Voltage rating	D.C. Voltage rating	List number	Dimensions in millimetres
			A
450	200	GS700	46
660	400	GSL1000	60
800	500	GSL1200	107
1300	825	GSL2000	121.4
		*GSH2000	

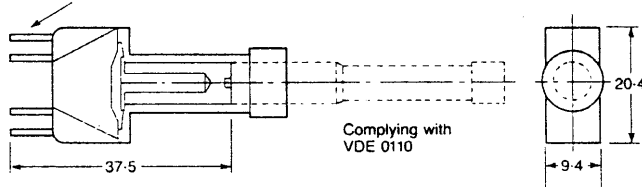
* For special applications only.



Spring loaded indication plunger (Released when fuse link operates) can also be used for operating auxiliary equipment.

Micro-switch and Adaptor

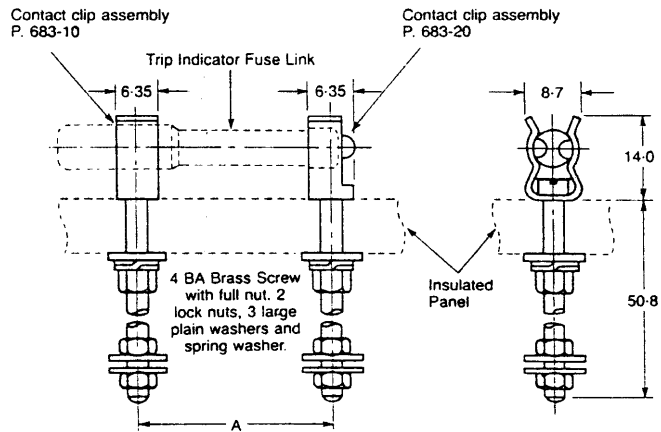
Terminals to suit AMP type "110 Faston receptacles"
List No. 150205-2



Contact Clip Assemblies

For use with Trip Indicator Fuse Links.

For Trip Indicator Fuse Link -	Dimensions in millimetres
	A
GS700	32
GSL1000	46
GSL1200	93
GSL2000	107.5
GSH2000	



Types 'GSMJ', 'GISMJ', 'GSMK' & 'GISMK'

Figure 11

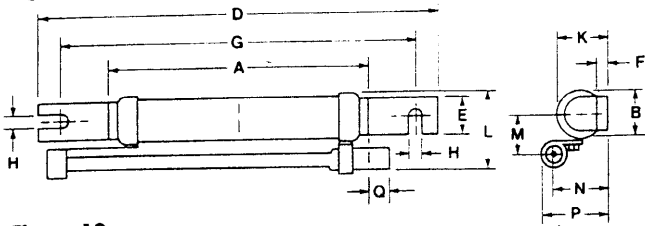


Figure 12

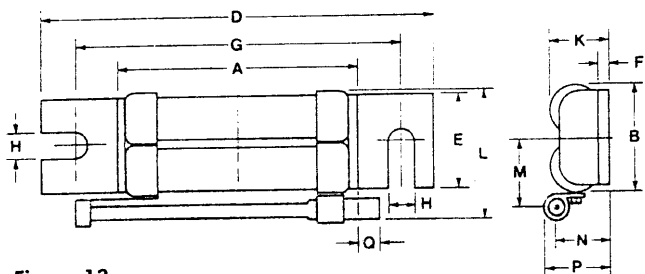


Figure 13

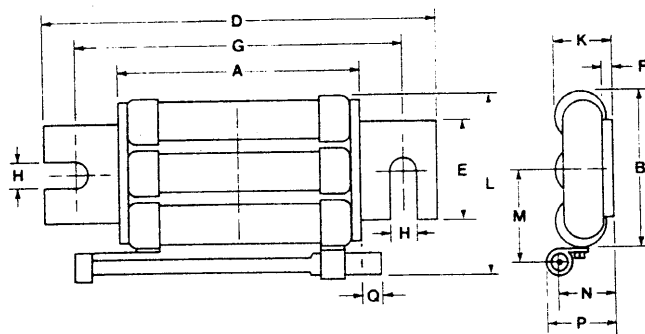


Figure 14

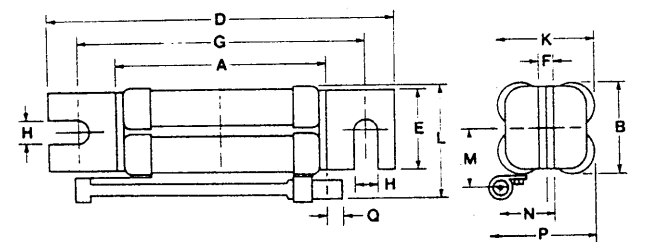


Figure 15

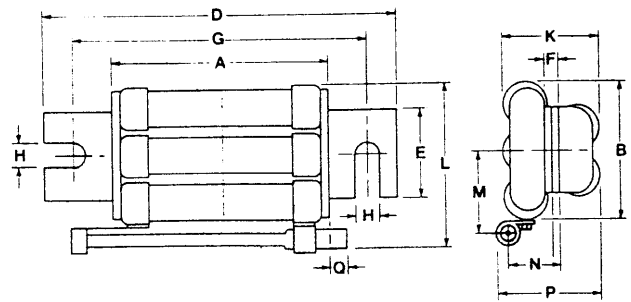


Figure 16

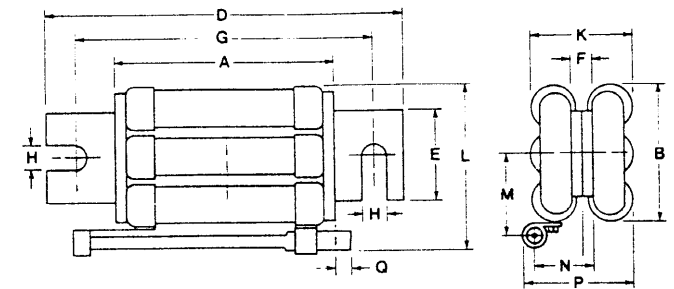


Figure 17

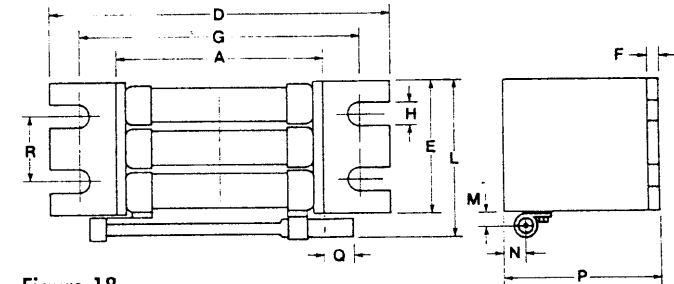
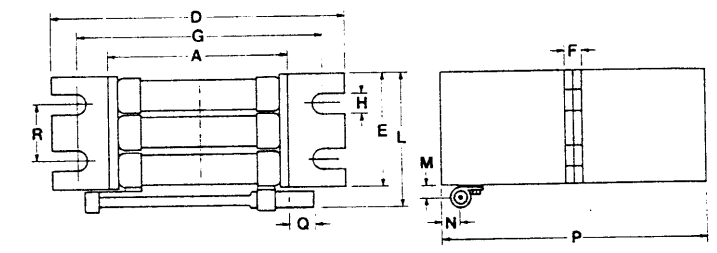


Figure 18



Type	Rating Amp	Fig. No.	Dimensions in millimetres													
			A	B	D	E	F	G	H	K	L	M	N	P	Q	R
GSMJ & *GISMJ	63	11	75	17.5	125	12	1.6	110	6.3	18.3	27.5	14	19	23.4	18	-
	120	12	75	41	135	38	3.2	110	11	21	50	25.5	20.5	25	15	-
	180	13	75	61	135	38	3.2	110	11	21	71	36	20.5	25	15	-
	240	14	75	41	135	38	6.4	110	11	42	50	25.5	23.7	46	15	-
	300	15	75	61	135	38	6.4	110	11	42	71	36	23.7	46	15	-
	350	16	75	61	135	38	9.6	110	11	45	71	36	26.8	49	14	-
	400-460	17	75	-	135	60	4.8	110	11	-	70	5	9.5	70	18	30
	520-680		77	-	135	80	6.3	110	11	-	90	5	9.5	90	20	40
800	18	75	-	135	60	9.6	110	11	-	70	5	9.5	140	18	30	
1000-1200		77	-	135	80	12.6	110	11	-	90	5	9.5	180	20	40	
GSMK & *GISMK	32-63	11	95	17.5	145	12	1.6	130	6.3	18.3	27.5	14	19	23.4	11	-
	120	12	95	41	155	38	3.2	130	11	21	50	25.5	20.5	25	9	-
	180	13	95	61	155	38	3.2	130	11	21	71	36	20.5	25	9	-
	240	14	95	41	155	38	6.4	130	11	42	50	25.5	23.7	46	9	-
	300	15	95	61	155	38	6.4	130	11	42	71	36	23.7	46	9	-
	350	16	95	61	155	38	9.6	130	11	45	71	36	26.8	49	7	-
	400-460	17	95	-	155	60	4.8	130	11	-	70	5	9.5	70	14	30
	520-680		97	-	155	80	6.3	130	11	-	90	5	9.5	90	12	40
800	18	95	-	155	60	9.6	130	11	-	70	5	9.5	140	14	30	
1000-1200		97	-	155	80	12.6	130	11	-	90	5	9.5	180	12	40	

Note: Indicator fuse link shown shaded if fitted.

* Add-on indicator fuse link conversion kits are not available for this range of fuse links. For indicated version order as GSMJ/--- or GISMK/---.

Types 'GSA', 'GSD', 'GSB', 'CGS1000'
& 'CGIS 1000'

Figure 1

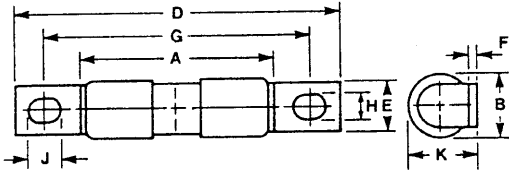


Figure 3

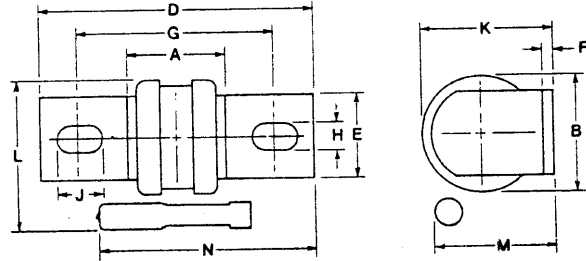


Figure 2

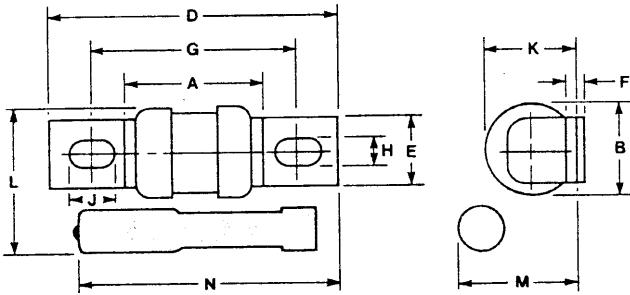


Figure 4

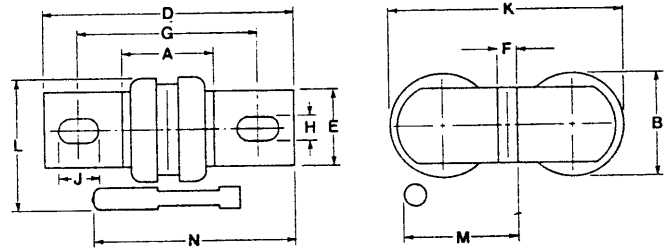
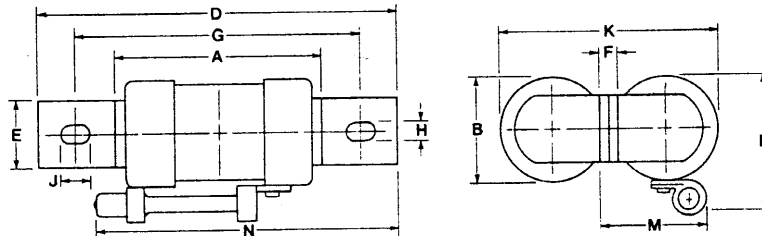


Figure 5



Type	Rating Amp	Fig. No.	Dimensions in millimetres											
			A max	B	D max	E	F	G	H	J	K	L	M	N
GSA#	5-20	1	28.2	8.0	47.6	6.4	0.8	38.1	3.8	5.0	8.7	-	-	-
GSA	25-100	2	29.2	17.3	58.4	12.7	1.6	41.8	6.4	7.9	18.2	28.6	24.6	52.4
	125-250	3	32.6	34.6	85	25.4	3.2	60.3	10.3	15.5	38.8	45.3	35.2	64.3
	300-600	4	32.6	34.6	85	25.4	6.4	60.3	10.3	15.5	77.6	45.3	38.4	64.3
GSD	125-150	2	29.2	17.3	58.4	12.7	1.6	41.8	6.4	7.9	18.2	28.6	24.6	52.4
	300, 350	3	32.6	34.6	85	25.4	3.2	60.3	10.3	15.5	38.8	45.3	35.2	64.3
	700	4	32.6	34.6	85	25.4	6.4	60.3	10.3	15.5	77.6	45.3	38.4	64.3
GSB	5-20	1	55.0	8.0	74.6	6.4	0.8	65.0	3.8	5.0	8.7	-	-	-
GSB	25-75	2	50.0	17.3	79.5	12.0	1.6	61.8	6.4	7.9	18.2	28.6	24.6	70.4
	100-250	3	55	34.6	107.0	25.4	3.2	81.7	10.3	15.5	38.8	45.3	35.2	84.1
	300-500	4	55	34.6	107.0	25.4	6.4	81.7	10.3	15.5	77.6	45.3	38.4	84.1
*CGS 1000 & CGIS 1000	400-600	5	77.8	40.5	136.5	25.4	6.4	110	10.3	15.5	83.3	49.6	35.0	113

Note: Add-on indicator fuse link shown shaded.

* Add-on indicator fuse link conversion kits are not available for this range of fuse links. For indicated version order as CGIS 1000/---.

Indicator not available on this size.

Type 'GSGB'

Figure 6

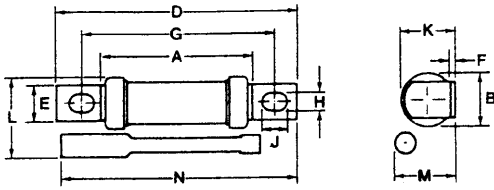


Figure 8

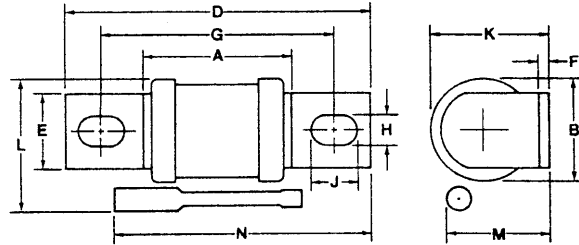


Figure 7

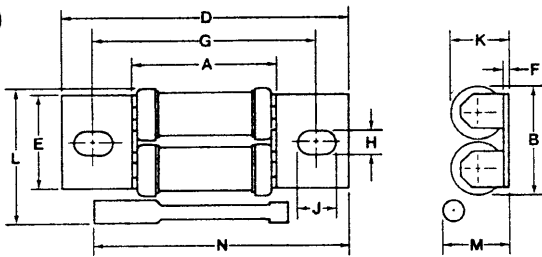


Figure 9

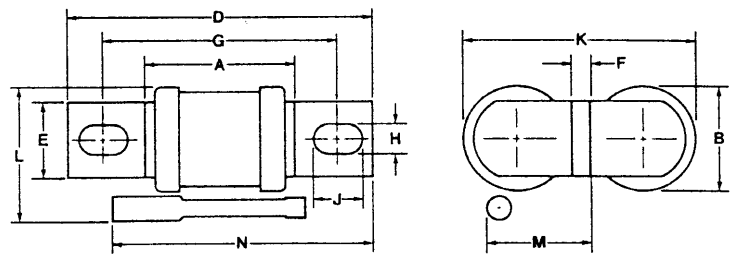
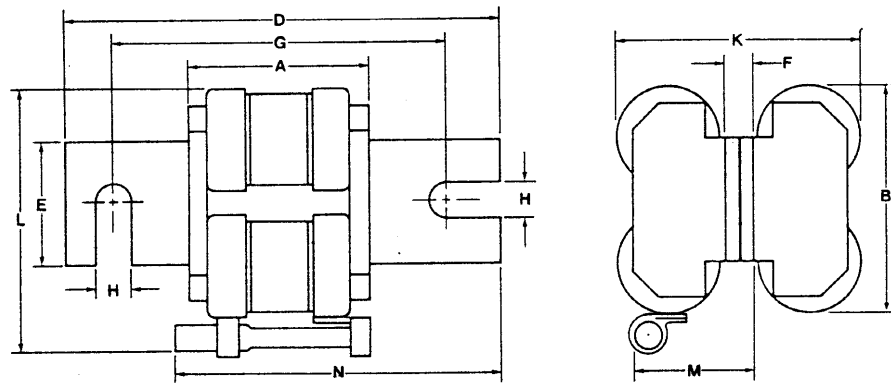


Figure 10



Type	Rating Amp	Fig. No.	Dimensions in millimetres											
			A	B	D	E	F	G	H	J	K	L	M	N
GSGB#	16	6	50	17.3	79.5	12	1.6	61.8	6.4	7.9	18.2	-	-	-
GSGB	25-80	6	50	17.3	79.5	12	1.6	61.8	6.4	7.9	18.2	28.6	24.6	70.4
	75-160	7	48	35.7	95	31.8	1.6	72	8.3	13.4	19	46.4	23.8	80.2
	170-250	8	55	34.6	107	25.4	3.2	81.7	10.3	15.5	38.8	45.3	35.2	84.1
	175-500	9	55	34.6	107	25.4	6.4	81.7	10.3	15.5	77.6	45.3	38.4	84.1
*GSGB	510-900	10	57.2	73.8	143	39.7	9.6	110	11.5	-	80.8	84.5	40.8	102

Note: Add-on indicator fuse link shown shaded.

* Add-on indicator fuse link conversion kits are not available for this range of fuse links. For indicated version order as GISGB/-- --.

Indicator not available on this size.

'RED SPOT'

Adaptor kits for Semi conductor fuse links

GEC ALSTHOM has now introduced a range of 'RED SPOT' adaptor kits which will enable the mounting of 'GS' type semi conductor fuse links, up to 75 Amp rating into 'RED SPOT' fuseholders without the need for a range of 'specials'.

The adaptor kits are designed to simply and quickly modify a 'standard' 'RED SPOT' holder of any connection style.

These kits include a self adhesive label to fit to the front of the fuse carrier to indicate that the fuseholder has been converted.

Full details of 'RED SPOT' fuseholders are shown in publication IEF/415.

Four kits are available as follows:-

Adaptor Kit	Fuse Links Accommodated	For Use in Fuseholder	Superseded Fuseholder
GRS32/A	GSA 5-20	RS32	SGM20
*GRS63/A	GSA 25-50	RS63	MGM50
GRS100/B	GSB 5-20	RS100	MGM20
	GSA 75		GM75
*GRS100/A-B	GSB 25-50	RS100	MGM50
	GSGB 16-45		MGM50

Note: * These adaptor kits do not accommodate all fuse links that could be fitted into the superseded fuseholders.